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ABSTRACT

These materials will help the educator develop an awareness of nonverbal behavior, which is complimentary to and independent of the verbal realm, to give a complete picture of the classroom. The purpose of the manual is to enable the teacher to identify nonverbal components of behavior, including dimensions other than behavioral of the teacher's role as classroom leader, and to understand the influence of these components on the verbal teacher-pupil interaction and classroom climate. Five chapters: 1) explain the rationale for developing four nonverbal dimensions of the teacher's role; 2) present fifteen symbols that comprise four dimensions of the Nonverbal Interaction Analysis System (NIAS); 3) present the four dimensions of teacher classroom behavior as they relate to each of ten Interaction Analysis categories of verbal behavior; 4) explain the use of the NIAS coding system, methods, procedures, techniques of observation, and procedures for collecting NVIA data; and 5) present techniques for analyzing these data and interpreting relationships between the nonverbal dimensions and the verbal interaction. (Author/SJM)

NONVERBAL INTERACTION ANALYSIS

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NONVERBAL INTERACTION ANALYSIS

A METHOD OF SYSTEMATICALLY
OBSERVING AND RECORDING
NONVERBAL BEHAVIOR

By Peggy Amidon

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PREFACE

This manual is designed primarily for use by educators (teachers, supervisors, researchers) interested in classroom interaction or an observational system such as Interaction Analysis. The content is arranged to parallel the Interaction Analysis categories of verbal behavior. In addition, the nonverbal observational system is able to accommodate the thirty expanded Interaction Analysis categories as well as many other observational instruments.

For the educator interested only in studying nonverbal behavior these materials may be used independently of verbal observation. Hopefully, these materials will help develop an awareness of nonverbal behavior that is both complementary to and independent of the verbal realm.

A recent combination of the Interaction Analysis and Microteaching teacher-training techniques prompted the need for classifying *nonverbal behaviors,* accessible via videotape, in a similar manner to classifying *verbal behaviors* accessible via audiotape. Presumably, inconsistencies between the two behavioral dimensions could be identified during taped replay.

Interaction Analysis helps the teacher become more aware of classroom interaction by objectively describing his verbal behavior and the verbal behaviors of his students. These materials extend such awarenesses by analyzing nonverbal components of verbal behaviors. Secondly, Nonverbal Interaction Analysis identifies several other dimensions of the teacher's role that influence the classroom climate and interaction.

CHAPTER I

FOUR NONVERBAL DIMENSIONS OF THE CLASSROOM

This manual has two purposes:

1. To enable the teacher to identify nonverbal components of behavior and understand the influence of these components on the verbal teacher-pupil interaction.
2. To identify dimensions other than behavioral of the teacher's role as classroom leader and the influence of these dimensions on the classroom climate and interaction.

Educators agree that a teachers' verbal behavior is an important factor in determining both the level and amount of student participation, as well as the socio-emotional climate of the classroom. The teacher's ability to regulate his verbal behaviors in accord with learning goals depends greatly upon his awareness of his behavior and the clarity of his goals. Teachers have been trained through various methods to become more aware of their behavior and its influence on the teaching situation. One of the most satisfactory methods has been to help teachers analyze this relationship by objectively describing their own behaviors and the consequences of these behaviors by objectively describing the resulting student behaviors. The objectivity offered by various category systems has been extremely useful in identifying this teacher-pupil interaction.

This awareness of verbal behaviors can be expanded to include the nonverbal dimensions of the teaching situation. This awareness includes several other than immediate behavioral dimensions of the teacher's role in the classroom. Helping teachers recognize the influence of the classroom setting, the importance of selecting and presenting materials, and the impact of nonverbal behavior are the goals of *Nonverbal Interaction Analysis.*

THE IMPORTANCE OF OBSERVING NONVERBAL BEHAVIOR IN THE CLASSROOM

Recent emphasis on nonverbal communication has produced a great demand for tools or techniques that identify its effect on the interaction in the classroom. A number of category systems have been developed that identify the verbal interactions. However, thus far, no system has been developed that objectively classifies nonverbal teacher and/or pupil behaviors. Hopefully, a teacher will be able to understand their importance and be able to analyze and/or modify his behaviors accordingly.

Interaction Analysis allows a teacher to identify his behavioral objectives in terms of those categories of verbal behavior he sees as important in accomplishing a teaching goal. Nonverbal communication can be an important factor in accomplishing the teacher's behavioral objectives. For example, if the teacher wishes to accept student ideas (Interaction Analysis Category 3), he will necessarily be concerned with his verbal behaviors. In addition, there are

certain nonverbal aspects of the teaching role that he may wish to consider. These considerations include the way in which the teacher displays or nonverbally accepts such student contributions as written essays, art creations, etc. Similarly, if the teacher intends to praise or encourage student participation (Category No. 2), he may find certain nonverbal behaviors, such as frowning or shaking his head, to be detrimental in accomplishing this objective.

If the teacher wishes to promote a student-to-student discussion-type activity, certain dimensions of his role as classroom organizer may be considered. Among these considerations are the type of seating arrangement, his own role in the activity (leader, evaluator, participant, reactor). The teacher's selection of materials is important in planning and promoting certain activities, such as art and science, home economics, etc. Audiovisual aids can provide motivational (Expanded Interaction Analysis Category No. 5m) or informational (Expanded Interaction Analysis Category No. 5f) functions. A complete description of these nonverbal aspects of the teacher's role follows.

FOUR NONVERBAL DIMENSIONS OF THE TEACHER'S BEHAVIOR

The following four aspects of the classroom comprise certain "nonverbal" factors that affect the teacher-pupil interaction in the classroom. These four dimensions are important in observing and describing the total teaching-learning situation. Each of the four dimensions contains certain observable items that provide *clues* or *cues* to their communications function.

The first and second dimensions are concerned with the classroom setting. The physical arrangement of such items as desks, tables, chalkboards (Dimension I) and the presence of certain materials and supplies (Dimension II) provide clues to the type of interaction that might occur *prior* to the arrival of the teacher and pupils. These two dimensions might be analogous to the scenery and programs provided for the audience prior to the actor's entrance onstage.

The third and fourth dimensions are concerned with the classroom behavior. The nonverbal behaviors (Dimension III) and the activities (Dimension IV) provide cues to the verbal communication. These two dimensions might be analogous to the audience observing a pantomime and synthesizing the actions into a meaningful description. The clues and cues afforded by these dimensions are only that—cues or clues.

The items found in each of the four dimensions are symbols that are categorized according to the ten categories of Interaction Analysis. In certain appropriate instances the items are categorized according to the expanded categories of Interaction Analysis. This procedure thus provides the observer with a ready-made coding system by which he may note the nonverbal dimensions of the classroom—its interaction and arrangement. Such notations may identify discrepancies between the teacher's stated behavioral objectives and the actual behavioral interaction. Comparisons between verbal and nonverbal data reveal inconsistent behaviors.

Dimensions I and II include items that provide clues to the *future* interaction and types of activities that are likely to occur in a particular setting. Such setting clues may indicate grade level, class size, type of lesson, subject matter, certain affective/cognitive aspects.

Dimensions III and IV include items that provide cues about the *present* interaction and types of activities that are occurring. Such action cues may indicate teaching styles, classroom climate, the teacher's and/or pupils' interests.

DIMENSION I - ROOM ARRANGEMENT

This dimension is concerned with the physical arrangement of the room and its contents. The placement of the following items on the observation form provides clues to their functions:

*	Desks (Teacher's, pupils'):	Location, Content
**	Chalkboards, bulletin boards:	Location, Content
***	Tables, chairs, shelves:	Location, Content

DIMENSION II - MATERIALS

This dimension is concerned with the availability of various types of teaching aids. Such items provide clues to the activities that will occur.

*	Printed items:	Textbooks, teachers' manuals, lesson plans, encyclopedias, workbooks, dictionaries, library and resource books, magazines, newspapers
**	Audiovisual aids:	Pictures, filmstrips, televised programs, charts, maps, chalkboard
***	Special supplies:	Objects, machinery, manipulative equipment, creative instruments, tools, supplies

DIMENSION III - NONVERBAL BEHAVIORS

This dimension is concerned with the use of nonverbal behavior to replace or accompany verbal communication. By comparing the nonverbal with the speaker's verbal behavior, inconsistencies may be identified.

* Gestures
** Facial expressions, vocal expressiveness
*** Position, physical movement, posture

DIMENSION IV - ACTIVITIES

This dimension is a combination of the previous dimensions. It is concerned with the use of materials in conjunction with nonverbal behaviors. The following items include both teacher and pupil activities.

TEACHER ACTIVITIES	PUPIL ACTIVITIES
* READS - Uses printed materials. Refers to lecture notes, cites resources, announces schedules, assignments, reads test items, questions	* READS - Uses printed materials. Reads (aloud, silently) from printed source; refers to same.
** WRITES - Presents information, directions, questions at chalkboard; corrects tests, checks notebooks; records grades	** WRITES - Takes notes on teacher's lecture; copies chalkboard information; completes tests, checks homework, creative writing assignments
*** DEMONSTRATES - Uses special supplies. Shows function of equipment; use of supplies, tools; illustrates skills, techniques.	*** DEMONSTRATES - Uses special supplies. Duplicates teacher's demonstration of equipment; contributes creative explanation or novel use of supplies, construct models; presents, performs for entire class, audience; also student debates, panels.

CHAPTER II

SYMBOLS USED TO REPRESENT THE FOUR NONVERBAL DIMENSIONS

Chapter I explained the rationale for developing the four nonverbal dimensions of the teacher's role.

Chapter II presents the items in each dimension as identified by the symbols utilized in the classroom observation. The function of the symbols is similar to the category numbers in Interaction Analysis, which identify verbal behaviors. There are a total of 15 symbols for all the four nonverbal dimensions. These symbols are pictorial coding devices that provide a quick means of identifying and coding certain "other than strictly verbal" dimensions of the classroom.

The first part of this chapter presents the symbols used *prior to* observing the classroom interaction (Dimensions I, II). The second part presents the symbols used *during* observation of the classroom interaction.

The symbols are presented in order of their use during an observational session. This sequence follows Dimensions I - IV.

INFORMATION COLLECTED PRIOR TO OBSERVING THE CLASSROOM INTERACTION

Certain clues to the type of teaching style, interaction, activity, may be identified by observing the physical arrangement of the classroom and the types of materials that are present. These data are recorded prior to observing the actual teacher-pupil interaction. The primary purpose is to describe certain physical aspects of the classroom and its contents (furnishings and learning materials).

The following two dimensions are noted prior to observing the interaction. These data (Dimensions I and II) are entered on the cover of the observation form. (For an example see Page 107.

DIMENSION I - SYMBOLS USED TO REPRESENT THE PHYSICAL ARRANGEMENT OF THE CLASSROOM

The following symbols represent the items that affect the teacher's role as classroom organizer. The three asterisks (*, **, ***) refer to the three different groups of items that constitute the furniture contents.

* Desks

is the symbol used to represent the teacher's desk; a smaller symbol may be used to represent the pupils' desks.

** Chalkboards, bulletin boards

is the symbol used to represent a chalkboard.

is the symbol used to represent a bulletin board.

*** Tables, chairs, shelves

is the symbol used to represent tables or work space areas.

is the symbol used to represent groupings of chairs or special seating arrangements for reading or discussion groups.

is the symbol used to represent storage areas, such as shelves, display cases or cabinets.

In addition to this initial description, rearrangements in seating or furniture groupings are noted if and when they occur *during* observation. Such rearrangements might be characteristic of special subjects or activities. Because they usually affect the style of interaction, a second observation form may be required.

DIMENSION II - SYMBOLS USED TO REPRESENT MATERIALS AND SUPPLIES

The symbols used in Dimension II are similar to the first Dimension. They are entered on the cover of the observation form prior to observing the interaction. The purpose is to note the presence of curriculum materials and special equipment. (For an example, see Page 107.) Such identifications provide clues to the type of interaction or the activities that might occur. In addition to this initial recording, the presence of the materials items are noted during interaction.

The three asterisks (*, **, ***) refer to the three different groups of items that constitute teaching materials.

* Printed items

is the symbol used to represent any type of two-dimensional printed material, such as a teacher's manual, textbook, workbook, resource, reference book, newspaper, magazine, etc.

** **Audiovisual aids**

is the symbol used to represent a chalkboard. (It is recorded during interaction and is the same symbol found in Dimension I.)

is the symbol used to represent one-dimensional materials, such as maps, graphs, charts, tables, pictures. (It is recorded during interaction and is the symbol used to represent a bulletin board in Dimension I.)

The following three-dimensional items are used for more specific purposes—special subjects or activities. They are less common than the previous two groups of items.

*** **Special items (objects, equipment, supplies)**

is the symbol used to represent nonmechanical objects, such as models, globes, toys; special interest items, such as statues, cultural relics, etc. These items are end products of value in themselves and do not function for the purpose of producing something as do the following items.

is the symbol used to represent such machinery or equipment as typewriters, sewing machines, physical education equipment. The function of these items is to create a product or perform an operation.

is the symbol used to represent manipulative supplies, such as industrial arts tools, arts and crafts supplies, home economics items, musical instruments, other supplies required for performing an individualized task.

By combining a Dimension I or a Dimension II symbol with an Interaction Analysis category number, the contents of furniture and material items may be identified. (See Appendix A for Interaction Analysis categories.)

represents a chalkboard containing *lecture*-type information.

represents a chalkboard containing *directions* or instructions.

represents a bulletin board containing *student-created* materials, posters, etc.

represents a printed item containing *cognitive matter,* such as subject matter texts, reference books.

represents a student-written item containing *predictable* matter, such as homework assignments, written responses to questions.

The following examples more precisely identify type and contents of each item by combining a Dimension I or Dimension II symbol with an *expanded* Interaction Analysis category number plus code letter. (See Appendix B for Expanded Interaction Analysis categories.)

represents a chalkboard containing an *orientational*-type of cognitive material, such as schedules, introductory information.

represents a poster containing *managerial* directions, such as rules for dismissal, duties, room chores.

represents a workbook containing *convergent*-type questions, such as math computations, compare-contrast questions.

represents a quiz containing solicited written *factual* responses by students, such as spelling words, formulae, other memorized information.

represents a bulletin board containing *student-initiated contributions* (nonassigned, voluntary), displays arranged by students.

represents a bulletin board containing *evaluated* student contributions that are personally pleasing to the teacher such as "pretty" art work, examples of "neat" penmanship papers, best poems.

represents a bulletin board containing *nonevaluated* student contributions that are acknowledged and arranged but not judged by the teacher, such as randomly selected art work, notebooks, essays.

represents a printed item containing *cognitively oriented* directions, such as an instruction manual, recipe book, details for dressmaking.

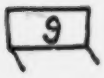
represents a printed item containing *factual* questions and space for students to write factual responses, such as workbooks, objective-type tests and quizzes.

DIMENSIONS I AND II
TYPE AND FUNCTION OF ITEMS IDENTIFIED BY COMBINING DIMENSIONS I AND II SYMBOLS, PLUS INTERACTION ANALYSIS CATEGORY NUMBER

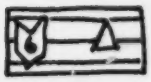
Combinations of Dimensions I and II symbols may further identify the contents and functions of the items. The complexity of such data depends upon the subject matter, the teacher's objectives, and the discretion of the observer. For example, the contents of a bookshelf may or may not be of importance to the observational description. However, if the observer wishes to note that the contents of a bookshelf consist of factual printed materials, he will

need the following combination of code components: The symbols that identify the bookshelf and the type of materials plus an Interaction Analysis category number. The bookshelf symbol is recorded first, the printed material symbol is recorded next, and the category number is enclosed within this symbol identifying the contents of the printed material.

represents a group of chairs, the function of which is speculated to be *cognitive* since the following items may be found in close proximity: easel containing teacher's diagrams, student notebooks containing similarly copied diagrams.



represents a table, the function of which is speculated to be *student-centered* or nonteacher directed, since the following items may be found in the same location: scissors, paste, a diverse representation of student artistic creations.



represents a cabinet containing equipment and books. The function of these items is speculated to be *instructional*, since the printed materials contain cognitive directions (may be instructions for operating equipment).

represents shelves containing student-volunteered objects (handmade contributions) and *motivational* reading (printed items and comics and picture books). The function of these items is speculated to be for "free time" or "enjoyment" purposes, since the contents are obviously not cognitively oriented and are selected on the basis of their appeal to the students.

INFORMATION COLLECTED DURING OBSERVATION OF CLASSROOM INTERACTION

Just as Dimensions I and II offered clues to the interaction that is likely to occur, Dimension III identifies nonverbal behaviors that offer cues to the verbal interaction occurring. The data collected by the third and fourth dimensions are sequentially recorded during interaction and identify flexible classroom dimensions. The purposes of these symbols are multiple. Besides pictorially representing the nonverbal behaviors, the third dimension identifies these nonverbal gestures and expressions as being either congruous or incongruous with the verbal behaviors. Besides pictorially representing learning aids (Dimension II), the fourth dimension identifies their use as either accompanying or as replacing a verbal behavior. Besides pictorially representing individually categories of behavior, sequential recording identifies the time sequence relationship of interaction and the context in which it occurs. Data for the following two dimensions, plus the Dimension II items, are noted during observation and are entered on the inside of the observation form. A complete description of observational recording procedures is found in Chapter IV.

DIMENSION III - SYMBOLS USED TO REPRESENT THE NONVERBAL BEHAVIORS

The following symbols represent the nonverbal dimension of the teacher's behavioral role. The three asterisks (*, **, ***) refer to the three different groups of items constituting nonverbal behavior.

How consistent are verbal and nonverbal behaviors? How much information may be recorded by strictly visual cues? The first question necessitates collecting both verbal and nonverbal data, and the second necessitates isolated conditions for the collection of strictly nonverbal data. Chapter IV explains these methods.

You are already familiar with the procedure of combining a Nonverbal Interaction Analysis symbol with an Interaction Analysis category number. Examples of such combinations follow each group of symbols.

* **Gestures**

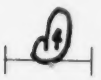
is the symbol used to represent movements or manipulations of the hand.

The following examples of combined code components identify the function of a gesture.

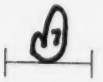
represents use of hands to comfort, relay such *feelings* as sympathy, tenderness

represents use of hands to compliment, *praise,* show affection, approval, by applauding, slapping on back, hand shaking, waving, etc.

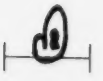
represents use of hands to *acknowledge* student's contributions, ideas, by pointing to, holding up concrete contribution, gesturing toward.



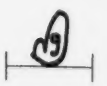
represents use of hands to give *directions,* such as pointing toward, directing movement, indicating next speaker.



represents use of hands in a *critical* manner such as shaking fist, physical contact such as slapping, restraining pupil's movements.



represents pupil's use of hands, such as raising hand to *respond* to a question

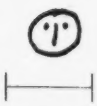


represents pupil's use of hands to *initiate* contact such as holding up hand to attract teacher's attention, interrupting

** **Expressions (facial, voice)**

is the symbol used to represent the facial expressions utilizing (• •) the eyes, (‿) the mouth.

The following examples of combined code components identify the content of the facial expression:



represents the use of the eyes to communicate *acceptance of feelings;* to express empathy, understanding, sympathy; to communicate listening with attention, interest, and concentration.

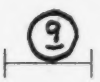
represents the use of the mouth to communicate *praise;* to express approval, liking, friendship, pleasure, joy.

represents the use of the eyes to communicate *acceptance of ideas;* to communicate listening with interest, acknowledgment of a student's verbal contribution; glances directed toward a student's concrete contribution.

represents use of the head to *solicit student response,* such as nodding head toward student to indicate an answer is expected.

represents use of mouth to communicate *criticism,* disapproval, such as frowning, pouting, sneering; blank face communicates turning away, ignoring

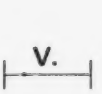
represents use of head by a student to *respond,* such as nodding "yes," shaking head "no," in answer to a narrow question



represents use of mouth for *student-initiated* expression, such as fear, anger, gasp of surprise

represents use of mouth to indicate *cause of confusion,* such as an abundance of chatter, verbal commotion

Although 10c usually represents verbal confusion, such as is caused by excessive noise, this category has been extended to include *quiet confusion,* as identified by facial expressions of perplexity, inability to attend to the lecture. Included are such signs of inattention as looking away, looking around, wrinkling forehead, raising eyebrows.



is the symbol used to represent inflections, intonations (verbal), inconsistencies between the verbal content and the voice. The words "Oh,

2(7v.) that's a fine job" may appear to communicate praise. However, certain sarcastic *voice intonations* may communicate criticism. Since the voice is actually part of the verbal communication, in such instances the observer records the verbal symbol alongside the verbal category number. A detailed explanation is given in Chapter IV.

*** **Position, physical movement, posture**

X is the symbol used to represent position. It indicates motionless stability in one location for an extended period of time. It usually indicates an activity in which a single individual is in a central position performing for an "audience." Such examples include lectures, demonstrations, tests, etc.

↑ is the symbol used to represent movement. It indicates motion or a change in position. The position changes may refer to several individuals, such as a number of students leaving their desks to go to the chalkboard; a mass movement, such as the entire class regrouping themselves for an activity; or a single individual changing positions, such as the teacher moving about the room to assist students.

↑ 1 represents a teacher moving toward a student to acknowledge an *emotion,* such as to comfort, express sympathy, understanding.

↑ 2 represents the teacher's use of movement toward student to express *approval,* give praise.

↑ 5 represents a teacher moving toward a student to assist them with a cognitive task, such as to answer questions, supply *information.*

↑ 6 represents the teacher's use of movement to provide *directions,* such as demonstrating physical motions to be duplicated.

↑ 7 represents a teacher moving toward a student in a *critical* manner, such as to administer punishment, register disapproval.

↑ 8 represents a student moving to the front of the room to *respond* to a question; in response to a direction; to recite.

↑ 9 represents a student approaching a teacher to *initiate contact* or moving toward front of room to demonstrate an original or creative idea.

↑ 10 represents movement indicating commotion or confusion, such as mass movement in lining up for recess; dismissal; regrouping.

DIMENSION IV - THE USE OF SYMBOLS TO REPRESENT ACTIVITIES

Note that the wording of the title of this section has been slightly altered. Each of the previous three sections, Dimensions I, II and III, has presented a different set of symbols used to record the items found in that dimension. Dimension IV utilizes *combinations* of these symbols to represent the last nonverbal dimension of the teacher's role in the classroom. This is the most complex of the four dimensions, since it incorporates all the other items. Thus, it is also the most complex dimension to observe and record.

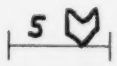
The three asterisks (*, **, ***) identify the three groups of teacher and student activities that constitute Dimension IV.

* **Reads - Uses printed or audiovisual materials**

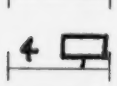
This use may be verbal or nonverbal and includes reading, quoting, pointing to, referring to or using as a replacement for verbal behavior any of the two-dimensional printed or audiovisual materials included in Dimension II.

The following examples identify the verbal use of an item by recording a Dimension II symbol, plus an Interaction Analysis category number, or the nonverbal use of an item by recording a Dimension II symbol, plus a Dimension III symbol.

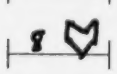
For verbal use of printed items, record a category of verbal behavior, plus a material symbol.



represents the *verbal* use of a *book* during *lecture.*

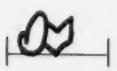


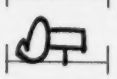
represents the *verbal* use of an *audiovisual* aid to ask *questions.*

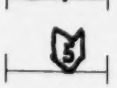


represents a student's verbal use of a printed item to respond.

For nonverbal use of printed items, record a gesture symbol plus a material symbol.


represents the use of a gesture to hold a book.


represents the use of a gesture to hold, point toward an audiovisual aid.



represents the use of a book to replace verbal lecture.

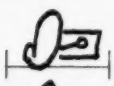
** **Writes**

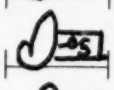
Writing may be used to replace verbal behavior. It includes all such instances of teacher writing as presenting information at the chalkboard, grading student work; all such instances of student writing as taking notes during lecture, copying infor-

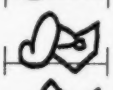
mation from the chalkboard, writing assignments, answering written test questions. Nonverbal writing is identified by recording a gesture symbol, plus a supply symbol.

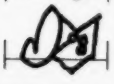
is the combination of symbols used to identify a writing activity. The *source* and *content* of the writing may be identified by additional combinations.

The following examples identify the *source* of the writing activity by combining the above symbol with a Dimension II symbol. The *content* of the writing activity is identified by combining the above symbol with an Interaction Analysis category number.

 represents writing at the chalkboard *(source).*

 represents writing information *(content)* at the chalkboard *(source).*

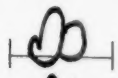
 represents writing in a book *(source).*

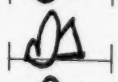
 represents writing answers *(content)* in a book *(source).*

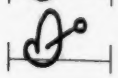
*** **Demonstrates**

Demonstrations may be used to replace verbal presentations and include all instances in which teacher and/or students manipulate special supply items such as machines, equipment; also illustrate techniques or physical movements.

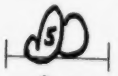
Several combinations of symbols identify these activities. Each includes the use of a gesture, plus a three-dimensional material, or the use of a physical movement.

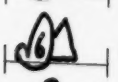
 is the combination of symbols that identifies handling an object.

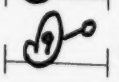
 is the combination of symbols that identifies using a *mechanical* item.

 is the combination of symbols that identifies manipulating tools, supplies.

The following examples identify the function of the demonstration by combining the above symbols with an Interaction Analysis category number.

 represents the handling of an object to *present information* (function).

 represents the use of equipment to provide *directions* (function).

 represents the *creative* manipulation (function) of tools by a student.

Reading, writing, and demonstrating are three distinctly different "actions," which can be easily identified by the observer. One of the purposes for developing these activities is to en-

large the teacher's communication repertoire beyond the use of verbal behaviors. This was done by developing three nonverbal interaction "modes" that utilize the basic ten teacher-pupil behaviors. For example, the most common category of classroom verbal behavior is lecture (Interaction Analysis Category No. 5). However, there is a variety of ways in which cognitive content can be presented other than by the teacher's talking. The following activities increase the level of pupil participation. They require that the pupils use additional senses (other than hearing) or that the pupils become actively involved.

The following four examples describe activities based on certain observable behaviors and/or the use of certain materials. Each of the situations provides a visual glimpse into a classroom. Each contains certain *cues* that indicate that the activity involves the presentation of cognitive content. Therefore, the observer identifies the content of the activity as Category No. 5. The cues provided by each of the dimensions are marked. The following key identifies the cues provided by each dimension. Try to record the appropriate code.

Dimension II - Materials are identified by an "underlined" word.

Dimension III - Nonverbal behaviors are identified by an "italicized" word.

Dimension IV - Actions describing the manner in which the material is being used are identified by an "asterisk."

1. The teacher is employing a gesture to *write information at the *chalkboard.*

   Code: _____

2. The teacher is employing a gesture to *demonstrate the use of a *bongo drum.*

   Code: _____

3. A *film strip* is being used to *replace the teacher's lecture on South Africa.

   Code: _____

4. A student is holding and silently reading a *reference book* about South Africa.

   Code: _____

Completed Codes:

No. 1 5 No. 2 5 No. 3 5

No. 4 5

Note that none of the four situations require verbal behavior.

One of the purposes of the four dimensions is to provide a tool teachers may use to develop new teaching strategies. By replacing verbal behaviors with a systematic, planned nonverbal means of communication, the classroom interaction may become more varied, and the learning climate may become more stimulating.

The next chapter describes how the seven teacher behaviors and the two student behaviors as developed by Interaction Analysis are applicable to *Nonverbal Interaction Analysis.* Each verbal behavior category contains some distinctly nonverbal elements.

CHAPTER III

NONVERBAL DIMENSIONS OF EACH VERBAL BEHAVIOR CATEGORY

Chapter I contained the rationale for developing a nonverbal observational system and its relationship to Interaction Analysis.

Chapter II expanded the teacher's role beyond the verbal to include four nonverbal dimensions of classroom behavior. The items and symbols composing each dimension were also presented.

Chapter III is arranged in seven sections to accommodate the Interaction Analysis categories of teacher-pupil verbal behavior. All four nonverbal dimensions are included for each of the seven verbal categories. The Interaction Analysis categories of verbal classroom behavior are identified by their nonverbal components. Also, identifications of the expanded Interaction Analysis categories of behavior are made when appropriate.

Prior to observation visual *clues* offered by the arrangement of the classroom and the presence of certain materials (Dimensions I, II) may indicate the types of teacher-pupil behaviors that are likely to occur. For example: An auditorium with a podium, a screen, and microphone on stage may indicate lecture. (Interaction Analysis Category No. 5)

During observation visual *cues* offered by the teacher's position, gestures, use of material may indicate a certain category of verbal behavior. For example: The teacher writing facts at the chalkboard or quoting from a resource book may indicate lecture. Such clues and cues are indicators of verbal lecture behaviors. They are found in the first section, Category No. 5.

Each of the sections briefly describes the Interaction Analysis category of verbal behavior and includes references to the expanded Interaction Analysis categories. This introduction is followed by the nonverbal items in Dimensions I-IV as identified for that particular category of verbal behavior.

The categories are presented in order of the frequency with which the verbal behaviors occur in the average classroom. The sections appear in the following order:

Lecture	Category 5
Questions and Answers	Category 4, 8, 9
Directions	Category 6
Evaluation (Praise and Criticism)	Category 2 and 7
Acceptance of student ideas and student-initiated talk	Category 3, 9

Acceptance of student feelings	Category 1
Silence and Confusion	Category 10

Each of the sections is focused on a category of teacher behavior; the two categories of student behavior are combined therein.

LECTURE (Category No. 5)

Presentation of information is easy to identify, as this behavior invariably involves only the teacher. However, information may be presented by an outside resource person, the pupils i in the class, or by a variety of media methods. Lecture and other content-oriented activities may be inferred by room arrangement clues (Dimension I) and the presence of certain curriculum materials (Dimension II). The importance of nonverbal behaviors is minimized for this category (Dimension III).

Dimension IV consists predominantly of teacher activities, since there is a minimum of teacher-pupil interdependency or interaction. Pupil behaviors that offer cues to lecture activities are included. The majority of activities are cognitive. Content-oriented materials may be used either to present or locate information. Variations of lecture activities include the four subcategories as defined by the expanded categories of Interaction Analysis:

5m Motivational lecture
5o Orientational lecture
5f Factual lecture
5p Personal lecture

(See Appendix for detailed description.)

DIMENSION I - ROOM ARRANGEMENT - Lecture (Category No. 5)

* **Seating**

Function: Permit audience visual, auditory access to lecture presentation.

Types: Classrooms with conventional rows of stationary desks
Auditoriums, stages
Lecture halls
Television monitored classrooms

Contents: Various means of presenting lecture, such as microphones, screens, television, audio equipment (See Dimension II for details.)

** **Chalkboards, bulletin boards**

Function: Provide space for presenting (writing, exhibiting) curriculum-oriented content.

Contents:

Written	Exhibited
5f Facts, formulae, diagrams, definitions	5f Charts, graphs, news clippings
5o Outlines, schedules	5m Pictures, illustrations

May include content-related student work, such as assigned reports, notebooks.

*** **Tables, Chairs, Shelves**

Function: Provide space; materials for
a. Displays
b. Work groups, such as reading, math
c. Demonstrations
d. Reference work, individual research assignments

Contents

a. Displays of objects related to subject matter

b. Shelves contain textbooks, cognitive printed materials

c. Cabinet contains equipment, supplies

d. Resource encyclopedias, atlases, almanacs found in reading corner

Special arrangements include language laboratories, industrial arts, and home economics class provisions. (See Dimension II for additional items.)

DIMENSION II - MATERIALS - Lecture (Category No. 5)

* **Printed Items**

Function: Cognitively oriented to provide a source of content for individual curricular activities; a supplement to content for group-focused activities.

Types:

Motivational (5m)
Texts with colorful illustrations, exciting content, magazines, picture books, interesting library books, comic classics

Orientational (5o)
Teacher manuals, guidebooks, mimeographed copies of syllabuses, course requirements, schedules, previews, reviews, study guides

Factual (5f)

Student texts, teacher's manuals, newspapers, almanacs, resource books, encyclopedias, dictionaries, atlases, mimeographed copies of maps, graphs, charts

Personal (5p)

Teacher developed lecture notes, mimeographed copies of personal course requirements, personal specifications for work

** **Audiovisual Aids**

Function: Similar to Printed items (*above). Most frequently utilized in group-focused activities either to supplement or replace teacher's lecture.

Types:

Supplementary items	Source items (Replace)
Slides	Filmstrips
Pictures, illustrations	Movies
Maps, globes	Video-audiotape presentations
Graphs, charts, tables	Records

*** **Special Items**

Function:

a. May be motivational *supplements* to lecture.
b. Integral to lecture, indispensable.
c. Used for illustrating skills or *producing* an item.

Types:

a.

Nonmechanical objects that supplement the focus of the lecture. Embody and clarify the lecture. Includes models, examples of finished products, art objects, relics.

b.

Mechanical items (instruments or equipment), the operation (use) of which is the objective of the lecture. Includes equipment, machinery used in production, such as sewing machines, drill presses, other home economics, industrial or arts equipment. Skills include driving cars, playing musical instruments, operating physical educational equipment; also science, biology, language lab teaching machines of Skinner or Pressy type; individually operated reading pacers, viewing and listening equipment for slides, records, language lab equipment.

DIMENSION III - NONVERBAL BEHAVIOR - Lecture (Category No. 5)

* **Gestures**

Function: Used in presenting content; may be purposely minimized–hands folded, at sides, behind back.

Examples: Holds book, points to chart, map, object; used to write, demonstrate; expressive, evocative gestures, includes motioning toward self when expressing personal opinions.

** **Expressions (facial, verbal)**

Function:
a. Facial, verbal expressions concerned with presentation of content
b. Sequence identifies teacher as active, students as receptive

Examples:
a. Glances, looks at, toward audiovisual aids; reads, refers to printed items; may view audience periodically to receive feedback, acknowledge students' requests for information; expressive behaviors used to motivate, emphasize, vary pace (Expanded Category 5m).
b. 1) 5-5-5-5 sequence indicates steady, uninterrupted teacher presentation.
2) 5-5-9-5 sequence indicates student-initiated interruption (possibly as a request for information).
3) 5-5-10-5 sequence indicates pause; may provide emphasis, allow students to take notes.

*** **Position, Movement, Posture**

Function:
a. To grant the source of information a central position, permitting audience to focus on presentation
b. To permit teacher to move to or toward source of information; approach in order to assist individual pupils or groups

Examples:
5 X 5
a. Teacher stands, sits at front of classroom, stage, podium; at head or center of group.
b. Teacher leans toward audiovisual item; approahces object of discussion, moves to chalkboard; moves about classroom to assist or join groups of students.

DIMENSION IV - ACTIVITIES - Lecture (Category No. 5)

Structured by teacher to assure sequential coverage of curriculum content.

* **Uses Prepared Materials**

Purposes:
a. Provide supplementary content; *accompany* verbal presentation.
b. Provide source of content; *replace* verbal presentation.

Examples:
a. Supplementary
1. Teacher reads exciting story, poem; quotes, mentions items of interest in newspapers, shows slides; displays interesting pictures (Expanded Category No. 5m).
2. Refers to, previews chapter headings, table of contents; announces schedule, list of committees, report topics during orientation lecture (Expanded Category No. 5o).
3. Quotes encyclopedia, cites research, publication; reads answers to test questions; uses factual audiovisual aids such as maps, charts, graphs (Expanded Category No. 5f).
4. Relates personal experiences via slides, home movies, lecture notes; refers to bulletin board contents and displays of favorite items; personally selected magazines, newspapers (Expanded Category No. 5p).

b. Sources
1. Uses filmstrips, audiovisual presentations, records, taped and televised programs; schedules guest speakers and field trips to replace verbal lecture.

Students Use Prepared Materials

Purposes: Provide supplements, sources of information; replace, accompany teacher's presentation.

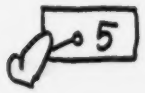
Examples: Students follow use of material during teacher's presentation; locate, read (orally, silently) information contained in printed materials, curriculum texts, resource items, distributed copies of teacher-developed syllabus; quote, cite information; prepare reports, assignment requirements, notebooks.

Cues: Seated at individual desks with cognitive materials; directing attention toward presentation.

** **Writes**

Purposes:
a. Provide group-focused written sources of information.
b. Provide individual mimeographed copies of information.

Examples: a. Group focused



1. Writes math computations at board; illustrations; definitions, formulae, diagrams, postulates; word lists, facts, data (Expanded Category No. 5f).
2. Writes introduction to unit, overview, schedule, outline of objectives at chalkboard, assignments, committees, curriculum requirements (Expanded Category No. 5o).

b. Individual copies

1. Distributes mimeographed copies of exciting story (Expanded Category No. 5m).
2. Distributes copies of personally developed bibliography, syllabus, course requirements, lesson plans, personal grading procedures (Expanded Category No. 5p).

Students' writing

Purpose: Record information.

Examples: Take notes during lecture, audiovisual presentation, another student's report; copy, synthesize information from printed source (text, reference book, chalkboard); complete assignments, reports, notebooks; copy duplicate maps, construct graphs.

Cues: Students seated at desks or information center writing in notebooks; attention directed toward source of information.

*** **Demonstrates**

Purposes: Provide group-focused, concrete presentations of theory or abstract phenomenon; also provide individualized assistance.

Examples: a. Construction, assembly of models, objects, products.

b. Functions of equipment, mechanical development of instruments as skills in themselves

c. Use of special supplies in creating a product; performing an experiment

d. Physical movements; motor skills, rudiments of sports and physical education games, such as judo, wrestling, team sports

Student Demonstrations

Purposes: Provide opportunity for students to function as sources of information; replace teacher's presentation.

Examples:

1. Students deliver written reports, recitals, oral presentations; quote, cite references, read content aloud from textbooks; present process demonstrations, such as home economics, recipes, art techniques, scientific experiments.
2. Students manipulate equipment, supplies to demonstrate their function, or as lab course procedures, driver education, music classes, physical education skills.
3. Students participate in study groups, conduct panels, debates based on curriculum content.

Cues: Individual student's presentation is focus of attention; students are at desks, lab tables working with supplies; reading groups are engaged in cognitive discussions.

QUESTIONS AND ANSWERS (Category Nos. 4, 8, and 9)

A teacher's question followed by a pupil's response is a readily identified behavior sequence. These Interaction Analysis categories of teacher-pupil talk have been combined, since they are quite interdependent behaviors. Questions and answers constitute the single most frequent teacher-pupil interaction sequence.

Questions can be presented to the students in a variety of ways. Certain materials, such as tests, workbooks (Dimension II), offer clues to question-response activities. Individual seating arrangements, such as examination situations, also provide clues (Dimension I).

Nonverbal cues (Dimension III) to question-response activities include motions indicating that the student is expected to respond; pupils raising their hands to answer questions or taking "turns" responding. A teacher referring to a source material (such as a spelling word list) followed by students writing answers, identifies a written type of question-response activity.

Most question-answer activities are cognitively oriented. The expanded categories of questions and responses are presented in the following ascending order of cognitive complexity. There are data to support the hypothesis that the question types occur in the same order of frequency. (See Appendix for complete description of expanded categories.)

Questions - Category No. 4		**Student Responses - Category No. 8** (Narrow [Predictable])
4f	factual questions	8f factual responses
4c	convergent questions	8c convergent responses
		Student Responses - Category No. 9 (Broad [Less predictable])
4d	divergent questions	9d divergent responses
4e	evaluative questions	9e evaluative responses

The above distinctions indicate the amount of restriction a particular question places on a student's freedom to respond creatively. These question and response levels can be more readily identified for printed materials than for verbal question-answer sequences. Printed texts, workbooks, quizzes, and exams offer excellent clues (Dimension II). Cues offered by the (visual) duration of teacher-pupil talk (Dimension III) may also indicate certain levels of cognitive complexity.

Evaluative questions, requiring less cognitive responses, may be identified by such nonverbal cues as indicate student involvement, intense excitement, eagerness, concern or desire to express opinions. This type of "emotional" participation approaches the affective realm of interaction.

DIMENSION I - ROOM ARRANGEMENT - Questions and Answers
(Categories No. 4 and Nos. 8,9)

* **Seating**

Function: Maintain distance between students for individual question-answer activities; permit pupil proximity for group problem-solving situations, special subjects.

Types: Conventional classroom with traditional rows of desks; teacher, central position; provision for grouping

Contents: Various individual printed question-answer materials (See Dimension II, for details.)

** **Chalkboards, Bulletin Boards**

Function: Provide space for presenting questions and/or responses; exhibiting examples of question and/or responses

Contents:

Chalkboard	Bulletin Board
4c Math problems to be computed	4f Map of United States incomplete, without states. Question: "Fill in states and capitals."
4e Which period of English literature do you find most interesting and why?	4d Timeline. Question: "Speculate about the events that happened prior to the period of history we studied."

4

Exhibited examples of students' tests, quizzes, other question-answer assignments, riddles, puzzles.

*** **Tables, Chairs, Shelves**

Function: Provide space and/or materials for:
a. Individualized practice, answer completion exercises, assignments, tests, reports, etc.
b. Experimental, discovery-type lessons
c. Group problem-solving activities, discussions, and committees
d. Displays of items (to identify, to evaluate)

Contents: a. Printed materials for skill practice, test booklets, resources and references, other information sources (4f, 4c)

b. Equipment, machines, supplies

c. Number of chairs, type of seating depend on number of members, types of group task.

d. Objects, such as relics, artifacts, sculpture

DIMENSION II - MATERIALS - Questions and Answers
(Categories No. 4 and Nos. 8,9)

*** Printed Items**

Function: Provide means by which pupils may identify (recall, apply) acquired knowledge. The level and amount are determined by the teacher and the following functions that provide:

a. *Source* of question and/or response. Question and/or response may be directly from printed source.

b. *Supplement* to question and/or response. Referred to by question or response; guides application, identifies conceptual type generalizations.

Types:

a. Source items (containing question and/or response) tend to include factual and convergent questions (4f, 4c).

1. Used in verbal questions, math drills, rote practice, chapter reviews. Teacher's manual may contain specific questions and suggested responses.

2. Printed questions, such as workbooks, textbook exercises, quizzes, spelling practice; math computations, use of formulae; duplication, completion of maps, scrambled texts. Above items may contain space for writing answers.
3. Source of curriculum content tests include:
   a. Objective tests: composed of factual questions, true-false, fill in blanks, completion, matching (4f).

      Convergent: Math computations, comparison-contrast, use of information, identify similarities-differences (4c)

   b. Subjective tests composed of essay questions requiring speculations, if-then hypotheses; divergent, original, creative solutions to situations, problems; evaluations (4d, 4c)

Following are combinations of objective and subjective items: questions requiring comparisons, contrasts, (differences-similarities) multiplicative processes.

Following are additional examples of materials and question types: pupils' texts, workbooks containing questions to be answered orally or in writing (includes broad concept type, as well as narrow factual type).

Examples of types of cognitive complexity found in subject matter textbooks are: spelling (fill in blank 4f), math (computations 4c), history (speculation of events 4d), art appreciation (evaluation 4e).

Following are examples of guideline questions for class discussions: social studies (review of chapter concepts 4f and implications for future 4d), literature (comparisons of several plays 4c and an evaluation of their merits 4e).

b. Supplementary items tend to include conceptual type questions.

1. Curriculum materials, such as teacher's manual, syllabus lesson plans, may include suggested questions or concepts. Previews of chapters, broad general discussion-type questions may identify direction of study, application or use of theory in practical ways.

2. Resource materials may supplement curriculum content or may provide source of factual answers. Examples include dictionaries, atlases, encyclopedias (8f). May also provide sources for comparison of information, such as different newspaper reports, editorials (8c), students' evaluations of editorials (9e), or content used in creative or original solutions (9d). Supplementary student publications may contain question-answer, reviews. Such examples include "Weekly Reader," "Junior Scholastic."

Supplement (to curriculum content) tests include achievement tests, I.Q. tests, personality inventories, sociometric devices, questionnaires, standardized tests; readiness or pretests, such as those that identify levels of competence or familiarity with the important points to be covered in a unit, film, etc.

** **Audiovisual Aids**

Function: Provide source of, or supplement to, group-focused preview, review-type activities; opportunities to identify and discuss acquired knowledge and concepts.

Types: Flash cards, multiplication tables, incomplete maps, timelines, flannel board. Films may include "preview-prequiz" type items or broad concept-type questions used to guide class discussion of film content.

4

*** **Special Items**

Function: As source or supplements by providing opportunity for students (individuals or groups) to duplicate experimental procedures (8f, 8c), discover own phenomenon (9d), evaluate items (9e).

Types:

a. Objects, artifacts to be identified, labeled, arranged in certain order, evaluated

b. Mechanical items or equipment, such as programmed instructional machines of Skinner, Pressy type; includes word recognition typewriters, individually operated reading pacers, viewing and listening equipment.

c. Manipulative supplies and tools, such as used in math, science to discover principles, phenomena

DIMENSION III - NONVERBAL BEHAVIOR - Questions and Answers
(Categories No. 4. and Nos. 8,9)

* **Gestures**

Functions:

a. To direct attention toward source of question; indicate student is to answer

b. To assist students in responding

Examples:

a. Teacher indicates source of question by holding book, pointing to audiovisual item, writing question at chalkboard, distributing copies of tests; indicates that student is expected to respond, acknowledges student's desire to respond by pointing, motioning toward board, etc.

b. Students may raise hands indicating desire to respond; use such gestures as holding books, writing at chalkboard, in test booklets, workbooks; pointing to audiovisual materials, manipulating equipment as part of response behavior.

** **Expressions (facial, verbal)**

Functions: Similar to functions of gestures (see * above)

Examples:

a. Facial expressions indicate source of question; indicate that student is expected to respond by glancing at, nodding toward materials, chalkboard; smiling at, eye contact with student who has hand raised indicating permission to answer.

b. Verbal expressions usually minimized; flat, reportive tone of voice unless involved in evaluative (4e - Expanded Category) question-response interaction; teacher, students read from question/answer source.

c. Sequences

1. 4-8; 4-9 sequences identify both teacher and pupils as involved in interaction.
2. Sequences may indicate subcategory-types of question-answers. Brief teacher-pupil interaction sequence (4-8-4-8) may indicate narrow factual or convergent questions and answers. Extended sequences of teacher-pupil interaction (4-4-9-9-9) may indicate divergent or evaluative questions and responses.
3. A 4-10-10-9-9 sequence may indicate "thinking time" prior to responding.
4. Verbal sequence may also provide cues to type of activity. For example; a teacher's verbal question followed by silence may indicate that students are involved in writing answers —4-10s-10s-4-10s (inclusion of Dimension IV symbols identifies such instances).

*** **Position, Movement, Posture**

Function:

a. To grant the source of question a central position, allowing students to focus on teacher, chalkboard; teacher to focus on pupils as source of response.

b. Movement, posture dictated by type of question-response situation.

Examples:

a. Oral question-answer activities, drills, reviews, in which teacher presents questions from center of room; also written quizzes, tests in which students remain at seats.

b. Group problem-solving situations, spelling bees; pupils approaching chalkboard to write answers, going to shelves to *locate* answers or to front of room to recite, demonstrate, respond.

Cues: Some student behaviors that provide cues to No. 4, 8, 9 activities include: expressions indicating eagerness to answer questions, contribute to discussion, such as raising hands, leaning forward, rising from seats when responding; smiling with pleasure at being recognized to participate, with pride at ability to demonstrate, explain creative or novel methods.

May display signs of disappointment at not being recognized to participate, such as looking down, frowning, pouting; signs of anxiety about being called upon for answer not known, such as nervous figeting, looking away, down, sliding down in seat behind pupil in front of him, doodling; signs of perplexity, such as furrowing forehead, biting lip, staring with concentration at question on test or at board; signs of anger at own inability to arrive at answer, such as tapping fingers, pencil nervously, wadding up math computations, paging randomly through source of answers.

Additional cues are handing in assignments, exchanging quizzes, tests, using gestures to explain answers, demonstrate, identical rote answers. May answer in chorus or seat by seat in order of position, respond to drills, flash cards, read, or answer in turn, questions found in texts, workbooks, homework assignments, quiz checks.

DIMENSION IV - ACTIVITIES - Questions and Answers
(Categories No. 4, and Nos. 8,9)

Loosely to tightly structured by teacher to provide opportunities for students to practice skills; identify acquired knowledge; develop problem-solving abilities and criteria for critical evaluations.

* **Teacher Uses Prepared Materials**

Purposes:

a. Provide sources of content by which to identify acquired skills and knowledge.

b. Provide supplements with which to enlarge repertoire of question-answer behaviors to include less predictable interaction.

Examples:

a. Sources
   1. Teacher cites question from printed curriculum sources, such as manuals, textbooks.
   2. Teacher uses audiovisuals for memorization, practice drills, such as multiplication table flashcards, other visual cueing devices.
   3. Distributes curriculum-developed printed tests, workbooks, standardized achievement-type tests.

b. Supplements
   1. Teacher uses curriculum items in flexible unstructured way; adapts content to students' needs; includes use of chapter previews, review, discussions.
   2. Teacher uses audiovisual items to promote speculative question-answer activities; includes use of incomplete maps, sequential arrangement of pictures, slides; timeline construction, etc.

3. Teacher uses standardized resource items to promote critical thinking and evaluative answers, such as in comparing various news magazines, conflicting references, opposing editorials, etc.

Pupils Use Prepared Materials

Purposes: Provide *source* of question and/or response; *supplements* by which to arrive at answer.

Examples: Students cite questions/answers from printed source, such as textbooks, homework assignments, audiovisual aids; employ several resource materials to locate information, answers for group problem-solving situations; independent use of audiovisual items to complement assignments.

Examples of types of questions based on content follow:

a. *Predictable* content corresponding to source of information.

1. Review-type questions identify acquired knowledge. "What did we learn were the main parts of an outline?" (Expanded Category No. 4f). "Compare the styles of Milton and Byron." (Expanded Category No. 4c).
2. Preview-type questions identify the main points to be covered in a new unit; may point out concepts as opposed to facts; may help students draw correlations between previous and current content, may appear as assignments or suggested guidelines.

   "When reading this selection, think about how Dickens' style is comparable to Caldwell's." (Expanded Category No. 4c).

   "How might Jonathan Swift have expressed his social concern in this current period of our society's development?" (Expanded Category No. 4d).
3. Questions combining audiovisual with printed information require transferring knowledge from printed to illustrated content; may be used to develop critical evaluative criteria.

   "Where are the Alps mountains on the map?" (Expanded Category No. 4f).

   "Why do they look different from the photograph in your textbook?" (Expanded Category No. 4c).

   "Rearrange the figures on the flannel board timeline to identify the events of the Peloponesian Wars; then identify and add the events of the present century." (Expanded Category No. 4c – past-present time relationship).

"Using clues offered by the dress, the refinement of the objects, and your knowledge of history, identify the pictures of the warriors with the weapons you think they might have created and used." (If concluding evidence is available or apparent, Expanded Category No. 4c; if not, Expanded Category No. 4d.)

The following subjective-type question identifying the students' conceptual perceptions about a film, etc., might be asked *prior* to showing the film: "Speculate about how Hannibal might have moved his troops across those mountains." (Speculation - Expanded Category No. 4d)

Following showing the film: "What were the advantages and disadvantages faced by both sides?" (Discussion of similarities and differences in geographic locale, supplies - Expanded Category No. 4c)

The following set of questions correlates learnings acquired via textbook content with information presented in a filmstrip:

"What did you observe happening to the land during the flood? (Expanded Category No. 4f)

"How did the forest fire we read about compare with the situation in the film?" (Expanded Category No. 4c)

"What are some suggestions you might make for preventing these catastrophes?" (Expanded Category No. 4d)

"Which type of control—flood or fire—do you think is more important to conserving our natural resources, preserving wild life?" (Expanded Category No. 4e)

Charts, tables, graphs provide content for questions:

"What does this bar graph represent?" (Expanded Category No. 4f)

"In answering the questions I have given you, you'll have to refer to the table of chemical elements found on the bulletin board." (Expanded Category No. 4c)

"List five compounds you think might have been among the earliest discovered." (Expanded Category No. 4d)

"Which of the four types of graphs—bar, line, horizontal, or vertical—is the simplest for you to construct and read?" (Expanded Category 4e)

b. *Unpredictable* content (not found in any prepared material) results in students' suggestions and allows students to develop own answers:

"Which of the three writers appeals to you the most?" (*why* implied)

Includes examples of student evaluation, planning content of activities, participating in scheduling, expressing preferences:

"I'd like to hear some of your suggestions on how we might organize this study of poetry." (4e)

Includes examples of group problem-solving activities or cooperative projects requiring speculations by individual students. Groups of seven students form to discuss and arrive at solution to a problem:

"Given the following conditions: ___, ___, ___, what are the five most satisfactory means of adjusting mankind to this new environment?" (4d)

"Each member decide on one item of personal value that is also worth something to the group. Be ready to defend your position." (4d and 4e)

Includes independent studies, project methods in which teacher aids student in formulating a researchable problem by offering specific criteria or proposing research questions for which to gather data (4f, 6c); integrating and comparing conflicting sources of data (4c), speculations of hypotheses (4d), evaluation with, by the student of his own efforts and findings during any phase of the project or final thesis (4d).

** **Writes**

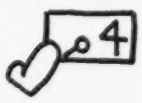
Purposes:

a. Provide group-focused written source of questions and/or responses.

b. Provide individual copies of questions; allows teacher to develop own tests, questions to meet demands of individual students

Examples:

a. Teacher writes questions at chalkboard.



1. Review items, quizzes, computation problems, workbook page assignments, text content completion items.

"3 x 4 = ____" (4c)

"Complete the questions on page 20 in your reading workbook." (4f)

"Answer the questions at the end of the second chapter by hypothesizing how the experiment was performed." (4d)

2. Includes group problem-solving situations in which the conditions, details, are listed:

"Twenty-five union men working 8 hours a day can complete a job in 1 week; how long will it take 10 non-union men working 6 hours a day?"

"Will the contractor profit if he pays the minimum union wage or if he pays the nonunion group $20 a day?"

b. Teacher distributes copies of mimeographed tests, quizzes, questions, duplications, completion items, concept-type guideline questions (may be created by the teacher or included as supplements to a text series).

1. Includes instructions:

"Complete Part I - Multiplication, in 10 minutes. Follow the provided example when computing your answers." (4c)

"Complete the map of the United States by drawing in and labeling the geographic characteristics." (4f)

2. Includes distributed copies of teacher-created guidelines or concept-type questions that are to be answered (or kept in mind when answering).

"What is the definition of Astronomy?" (4f)

"What is a galaxy, a planet, a satellite—how are they all alike, each different?" (4c)

"What possibilities can you foresee for the future of this ancient science?" (4d)

"Why I (do, don't) believe in Astrology." (4e)

Students Write

Purposes:

a. Allow student to respond in writing; teacher is more able to identify students' acquired skills and knowledge by requiring the students to write out answers rather than simply to vocalize the responses.

b. Allows students to answer series of questions at own rate, repeat or clarify content of questions by rereading.

Examples:

a. Write answers to teacher's verbal, written questions at the chalkboard as group-oriented class activity; at seats as individual activities, such as reviews, tests, quizzes.

b. Includes all instances in which students complete questions by writing.

1. Uses any curriculum material, such as textbooks, workbooks, tests, practice exercises; also correct own, others' assignments.

2. Locating, then copying, organizing, synthesizing information in order to answer assigned requirements for reports, notebooks, etc.; completing, copying maps, constructing graphs, tables, etc.

3. Developing pupil-created tests, quizzes, or offering written examples of possible test items. Includes completing questionnaires, evaluations (4e), speculations about teacher or pupil-demonstrated phenomena (4d).

Examples of types of written responses based on content:

Elementary English Class. Student labels parts of speech (8c). The student illustrates diagramming sentences. By applying the textbook's explanation to a sentence provided by the teacher, students create endings to a story by logically solving a problem faced by the characters in the episode (9d).

Math Classes. Students use U.I.S.M. math approach in which they change the given conditions or the conclusions of theorems, attempt to disprove rather than usual proving of theorems (8c). Secondary math student uses inductive approach to find generalizations through exercises designed to help discover fundamental principles and relationships (8c, 9d) as opposed to the deductive approach that emphasizes use of authoritative statements of rules of operations combined with extensive practice and drill (8f, 8c).

*** **Demonstrations (teacher and student behaviors are combined)**

Purposes: Allows teacher to identify students' ability to

a. Memorize steps, duplicate demonstrations, repeat physical motor skills.

b. Apply theory, illustrate, organize, and explain written content, correlate information by demonstrating use of equipment in structured performance.

c. Extend theory beyond "b." Create new uses, develop new techniques, discover solutions, experiment with equipment.

Examples:

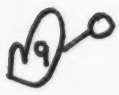
a. Teacher demonstrations are explained by student.

b. Student recitations, rote memorization, explanations of step-by-step procedures

c. Students repeat steps, follow instructions, interpret, apply theory or written content, use equipment in specific way, organize, synthesize information to fulfill demonstration requirements; physical performances to meet same.

d. Explain novel means of solving problems, using equipment.

e. Examples of demonstrated responses based on content:
   1. Students follow another's performance, such as the teacher's or a filmed presentation; descriptions of precise functions of equipment, supplies, reapplications of formulae, defined uses of charts, maps, repetitions of processes, skills, copying techniques (8f).
   2. Performing in response–duplicating experiments, using equipment in exact manner, precision techniques and skills (may include verbal explanation of procedure). Methods for performing experiment, restructuring process to fit scientific method, reorganizing content, such as in preparing reports, constructing models, group problem-solving demonstration, reports, committee efforts, panel discussions, debates in response to teacher suggested topics; any performance adapted to meet requirements such as recitals, music, writing, physical education demonstrations (8c).
   3. Self-directed use of equipment, content, explanations of personally discovered principles, relationships (includes both students' verbal explanations, as well as nonverbal demonstrations (9d).



DIRECTIONS (Category No. 6)

This behavior is quite easy to identify since the function of a direction is to alter behavior. The observer is usually able to note some kind of a student behavioral change or adjustment. Frequent use of directions, typical in many classrooms, is one index of teacher control. This regulating behavior may be implied by all four nonverbal dimensions.

Dimensions I and II include such clues as restrictive seating, stationary furniture arrangements, orderly displays, stereotyped bulletin boards containing identical student contributions, structured work materials, instructional manuals and guidebooks.

Although nonverbal facial expressions may be minimized, cues offered by Dimension III include the teacher's use of gestures to replace verbal directions, regimented movements, ritualistic gestures, flat, even tone of voice, brief terse interaction, and regulated student behaviors. Student behaviors include duplication of the teacher's physical movements; carrying out instructions by reading, writing, going to the chalkboard, lining up for assemblies, recess, etc. Activities such as the latter may include the entire class; others may pertain to single students involved in individualized skill practice; others may refer to groups engaged in directed work (Dimension IV). The above examples pertain to cognitive tasks; however, the function of a direction may be other than content oriented (i.e., the function may be to straighten up the classroom before dismissal). Example: "Before we can leave, we must line up our desks in straight rows, put our books in a pile under our chairs, return all art supplies to the cabinet. The first row to finish will be dismissed to get coats." The preceding verbal direction is quite different from the example that follows:

> A printed material contains a recipe for making a meat loaf and includes an itemized list of ingredients and step-by-step instructions.

Although, in both instances, the students' freedom, creativity may be limited, the complexity of required operations is quite different. Also, the degree of teacher control is more apparent in the first, and the rationale is not stated. The second is concerned with subject matter; the first is not. For this reason, two subcategories of directions were developed.

The two expanded categories delineate between the use of directions for cognitive versus noncognitive activities.

6c Cognitive directions
6m Managerial directions

Category 6c usually occurs as instructions for a curriculum activity. Dimension II clues include the presence of such curriculum materials as manuals, textbooks, special equipment. Dimension IV cues include individual seat work assignments, as well as group-focused work, such as reading, writing, rote recitations. Cues to managerial directions include the performance of an individual physical action, such as closing the window or a group action, such as classroom dismissal, other en masse actions or motions not requiring the use of curriculum materials.

DIMENSION I - ROOM ARRANGEMENT - Directions (Category No. 6)

* **Seating**

Function: Permit students to focus on source of directions.

Types: Conventional classroom with traditional rows; demonstration classrooms; auditorium with raised stage, gymnasium

Contents: Specialized equipment, supplies to accommodate instructional activities (See Dimension II, for details.)

** **Chalkboards, Bulletin Boards**

Function: Provide instructions for guiding cognitive behavior; regulations for governing noncognitive behavior.

Content:

6c	6m
Instructions for cognitive work, curriculum tasks, specifications for assignments, schedules, committee assignments; items to copy, duplicate; requirements for grades, extra credit, advancement (ex.: number of pushups); examples of proper way to arrange homework.	Directions for managing non-curriculum matters
	Reminders—things to bring for trip
	Duties—things to do before dismissal
	Rules—things to remember when riding bike
Recipes, pattern construction for sewing	Etiquette; rules of conduct

Displays may include properly developed student products; such contributions indicate stereotyped efforts, neatness, order, adherence to rules.

*** **Tables, Chairs, Shelves**

Function: Provide space and materials for performing specialized tasks; instructional demonstrations.

Contents: Precise materials and instructional manuals, detailed plans, guidebooks, orderly arrangement of tools and supplies

Shelves of cabinet containing guidebook for operating equipment

Table containing example of model to be constructed by precise manipulation of tools

DIMENSION II - MATERIALS Directions (Category No. 6)

* Prepared Printed Items

Function: Provide exact instructions necessary to master skills, accomplish cognitive learnings, perform noncognitive actions.

Types:

a. Curriculum items include teachers' manuals, syllabuses, keys to tests, list of course requirements, guidebooks, instructional manuals for using supplies, tools. Sequentially arranged student texts include guides, recipe books, programmed work materials, workbook exercises to be copies, penmanship booklets. Such pupil booklets indicate neat, stereotyped, identical efforts.

b. Teacher-developed items include personal procedures, exact instructions, rigid schedules, requirements, assignments, itemized activities; distributed bibliographies, mimeographed copies of work regulations, pictures to be traced or colored, lists of duties, seating charts, committee assignments, examples of proper ways to set up homework papers, do reports, complete assignments.

** Audiovisual Aids

Function: Illustrate exact procedures for performing activities.

Types:

a. Printed charts of step-by-step actions that must be followed in order to: perform an experiment, sew a dress; itemized lists of required supplies, checkpoints, numbered requirements; rules and regulations

b. Illustrations of how to operate, assemble machinery, equipment. Pictorial examples of "How to . . . " draw a tree, perform a dance step.

c. Filmstrips and audio- or videotaped lessons stress procedural demonstrations; films, tapes, records include detailed instructions for use; guides contain items to listen for; pre-follow-up activities.

*** Special Items

Function: Supplement teacher's verbal directions; provide source of students' instructions, performances.

Types:

a. Objects used as supplementary models to be duplicated; standards by which pupil products may be compared.

b. Equipment is used in production. Includes typewriters, sewing machines, industrial arts equipment; other precision machines or directed performance equipment. Includes physical education equipment, teaching machines, programmed instructional devices.

c. Supplies are supplementary to teacher instructions or sources of student performances. Includes manipulative items employed in a precise manner for constructing a product, completing a task, such as home economics supplies, industrial arts tools, certain arts and crafts supplies, telescopes, beakers, scales, rulers, compasses, other precise mathematical, scientific means of measurement.

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DIMENSION III - NONVERBAL BEHAVIORS - Directions (Category No. 6)

* **Gestures**

Functions: Used in giving directions, guiding students' actions; indicate student is to comply with instructions.

Examples:

a. Teacher indicates source of directions by writing, pointing to an audiovisual aid, equipment; performs physical motions; demonstrates techniques, skills to be duplicated; physically holds, controls students' manipulations, movements; indicates that students are to comply with directions, such as clapping hands, striking key on piano, etc.

6

** **Expressions (facial, verbal)**

Functions: Similar to functions of gestures (See * above.)

Examples:

a. Facial expressions such as glancing at, nodding toward direct student behaviors; indicate students are expected to comply with instructions; various facial expressions may be used in instructing speech clinics, acting classes.

b. Verbal expressions define, restrict pupil participation; usually minimized, flat, reportive, instructive tone of voice.

c. Sequence identifies interaction as teacher-controlled communication; teacher as source of instructions precedes students; student behaviors are a result of these directions.

1. 6-8-6-8 sequence indicates teacher.s verbal directions as cause; student verbal behavior as effect.
2. A 6c-6c-10s-10s-6c sequence may indicate students are writing, performing some directed cognitive action (inclusion of Dimension IV symbols identify such student behaviors).

3. The sequence 6m-6m-10c-10c-10c indicates group of students are complying with noncognitive directions such as lining up for dismissal, rearranging furniture, putting supplies away.

*** **Position, Movement, Posture**

Functions:
a. Grant source of directions central position; permit students to focus on teacher as director of activities.
b. Movements may replace verbal directions, provide nonverbal source of instructions.

Examples:
a. Teacher stands, sits at front of classroom, stage to deliver cognitive instructions; demonstrates techniques and procedures.

b. Teacher performs physical motor skills, movements to be duplicated, practiced; postures to be assumed—dance steps, judo class, team sports; shows examples of good posture, proper stance.

DIMENSION IV - INSTRUCTIONAL ACTIVITIES - Directions (Category No. 6)

Tightly structured by teacher in accordance with specific procedures and/or exact behavioral requirements.

* **Uses Prepared Materials**

Purposes: Provide supplements, sources of cognitive or managerial directions.

Examples: Teacher cites, refers to, distributes, displays:
a. Curriculum instructions, such as contained in manuals, direction booklets, guides; assures coverage of content, proper development of skills, use of equipment, details of proper form. Examples include thesis specifications, hand-writing form, experimental procedures.
b. Managerial directions, such as contained in lists of rules and regulations guide noncognitive behaviors. Examples include reminders, dismissal procedures, rules of etiquette, fire drill instructions, etc.

Pupils Use Prepared Materials

Purposes: Provide self-contained sources of instructions; supplements to be used in conjunction with other materials.

Examples: Sources of instructions include programmed curriculum materials; textbooks containing directions for covering content (6c); lists of managerial directions (6m); supplements include instruction manuals, which guide performances, use of equipment, supplies.

Cues: Students seated at desks using identical materials; read, recite in order, raise hands or rise when reciting; answer roll call, respond in chorus; hand work in, line up for dismissal automatically.

** **Writes**

Purposes:
a. Provide written source of cognitive instructions (6c); managerial directives (6m).
b. Provide supplementary illustrations, examples.

Examples:

a. Teacher writes assignments, page numbers, outline, schedule, committee appointments at chalkboard (6c). Creates posters, distributes mimeographed copies of managerial reminders (6m).
b. Teacher illustrates proper procedures to be followed, provides steps in solving math equations, examples of penmanship form, artistic techniques.

Students Write

Purpose: To follow directions

Examples:

Students complete written instructions in workbooks; copy, trace illustrations, maps, etc. Practice handwriting drills, repetitious copying of multiplication tables, other items to be memorized.

Cues: Students seated at desks with instructional materials, copying illustrations; at chalkboard, tracing, following written instructions.

*** **Demonstrates**

Purposes:
a. Provide physical motor skills; artistic techniques.
b. Emphasize steps in producing a product.

Examples:
a. Teacher performs physical motor skills to be duplicated, such as dance steps, physical education movements; demonstrates artistic, musical techniques.
b. Demonstrates exact procedures to be followed in constructing a model, using equipment, following a recipe.

Students Demonstrate

Purpose: Practice mastery of skills.

Examples: Students imitate teacher's physical skills; duplicate demonstrated precise use of equipment.

Cues: Routinized duplications of physical behaviors; creation of identical products; automatic behaviors, such as all class members tying their shoes; similar group behaviors.

PRAISE AND CRITICISM (Categories No. 2 and No. 7)

Evaluation by the teacher usually follows some kind of student behavior (verbal or nonverbal). The most typically evaluated student behavior is a verbalized response resulting from a question asked by the teacher (see previous section Question-Answers–Category Nos. 4, and 8,9, Page 26). Factual and convergent questions are the most frequent types of solicitations; likewise, factual and convergent answers are the most frequent types of responses. Since these types of answers (Category 8) are fairly predictable, the contents of such responses are easily evaluated. The primary purpose then of such evaluations is to affirm or negate the correctness, incorrectness of the student's answer. Evaluation of a student's nonverbal compliance with directions is similar (see preceding section - Directions, Category No. 6). Teacher reactions to divergent, evaluative student responses (Category No. 9) are less likely to be evaluative. This is explained in the following section "Acceptance of Student Ideas, Category No. 3."

Another purpose of praise and criticism is to encourage, discourage certain pupil behaviors that may not be related to cognitive learning activities. Included are unanticipated inappropriate pupil participations, such as interruptions, discipline problems; also commendable pupil behaviors, such as enjoyable performances, skillful, artistic contributions, etc.

A teacher's evaluative "reactions" to the approved versus the disapproved student behaviors are probably quite different. However, since the functions of the two types of evaluation (positive or negative) are similar, and since they are both elements of teacher control, the two categories have been combined in this section.

Clues offered by the materials present in the classroom–and their physical arrangement–may indicate the teacher's concern for appropriate versus inappropriate learning conditions. Perhaps the most significant items in Dimension I are those clues offered by the contents of bulletin boards, shelves, display tables. These items may contain student contributions somewhat like the nonverbal "responses" that have been "reacted" to by the teacher. Indications of evaluations, such as stars, number and letter grades, other appraisals may be *clues* to the teacher's emphasis on acceptable versus unacceptable student efforts. Similarly, evaluated printed materials (Dimension II), such as student completed workbooks, skill practice exercises (handwriting, penmanship, etc.), graded assignments, honor roles offer clues to the teacher's concern with the right versus wrong classroom learnings (good versus bad habits, behaviors, practices, etc.).

Probably the single most significant Dimension is the teacher's use of nonverbal behaviors. Dimension III offers abundant cues to the keen observer. Facial expressions may accompany or replace verbal statements of praise and criticism. A teacher's smile, indicating satisfaction, or a frown, indicating annoyance, both represent significant nonverbal evaluations. Such personal reactions by the teacher affect teacher-pupil rapport and classroom climate. Evaluations denoting personal pleasure, displeasure approach the affective realm and are distinct from evaluative reactions that have more of a cognitive function. For example, a verbal statement, such as "Right," verifies the content of a student's answer and thus serves a cognitive

function. The use of a nonverbal smile or personal glance, either accompanying or replacing the above verbalization, may bring the affective into the cognitive teacher (question) - pupil (answer) - teacher (reaction) sequence.

Certainly nonverbal physical punishment used to discourage undesirable student behaviors affects the classroom climate and teacher-pupil relationships and is undoubtedly more emotionally influential than is a verbal reprimand or a critical remark. However, even verbal criticism is invariably accompanied by sufficient nonverbal cues, such as teacher's and pupils' facial expressions that allow for identification. In the absence of verbal data such speculations are based on the "effect of the affect."

Variations among use and types of evaluation are numerous and may depend on personal (both teacher's and pupils') and/or situational factors. Perhaps such variations are related to the degree of emphasis placed on the importance of evaluation. Although differences exist among districts, schools, and classrooms, most learning activities involve some kind of evaluative technique. Included are written evaluations, such as report cards, grading scales, achievement tests, teacher's descriptive reports of pupil progress, etc. Written evaluations are sometimes replaced by teacher-parent or teacher-pupil conferences. Different teaching situations may require different types of evaluation. For example, the science teacher's evaluation of a student's attempt to combine the exact elements for a chemical solution is quite unlike the art teacher's appraisal of a student's sculpting effort. The rationale upon which these two evaluations are based may range from the purely objective to the quite subjective. The Expanded Category System identifies such discriminations. Three subcategories for both praise and criticism are based on the functions and the contents of the evaluation.

Praise (Category No. 2)	Criticism (Category No. 7)
2P Praise with public criteria	7P Criticism with public criteria
2p Praise with private criteria	7p Criticism with private criteria
2w Praise without criteria	7w Criticism without criteria

The function of both public and private evaluation is to communicate the criteria by which the student is being judged (i.e., the reason why his answer is correct, incorrect; why his behavior is acceptable, unacceptable). The content of the evaluation includes mentioning the reason for the praise or criticism. The reason is defined either by reference to an authority or a public standard of acceptability (public criteria) or by reference to the teacher's own personal preference or value (private criteria). (For more detailed description, see SKIT materials as listed in Appendix.)

DIMENSION I - ROOM ARRANGEMENT - Praise and Criticism (Category No. 2 and No. 7)

* **Seating**

Functions:
a. Permit teacher to view students in order to judge efforts.
b. Permit student to focus on authority for evaluation, permission.

Types: Conventional classroom with traditional rows; teacher in central position

I.P.I programs	Contests
Remedial classes	Judging events
Speech clinics	Apprentice situations

Contents: Various curriculum materials, instructional items, evaluative techniques; contest entries, products to be judged

** **Chalkboards, Bulletin Boards**

Function: Provide space for identifying, displaying acceptable, unacceptable student efforts by:
a. Objective evaluations of correct, incorrect knowledge and information (2w)
b. Exhibitions of "exemplary" products; approved, accepted standards of behavior (2P)
c. Teacher's selections of personally commended work; pleasing creative efforts (2p)

Contents:

a. Objective evaluation of student responses, such as corrected computations at the chalkboard, O.K.'d answers; incorrect information identified, circled, marked wrong; bulletin board displays of marked or graded tests, quizzes, assignments (2w)

b. Public standards of evaluation, such as pictorial examples of appropriate versus inappropriate actions, behaviors (ex.: Goofus and Gallant); etiquette, conduct rules developed by outside authority (other than teacher) such as principals, other students; proper form for such items as letter writing, introductions, proper methods compared with improper methods (ex.: steps in problem solving); objective honor role; test results; graphs showing pupil progress (2P)
c. Teacher's personal displays or selections of student products, such as art work, neat penmanship; colored stars for merits; reports or creative writing assignments with teacher's personal comments; teacher's personally approved standards for work (2p)

Examples: Pupil contributions such as might be found at the chalkboard or as a bulletin board display:

a. Chalkboard computations by students, corrected by teacher: 3 x 4 = 12 OK. (Expanded Category 2w); 3 x 4 = ~~7~~ (teacher marks through incorrect answer of 7. Expanded Category 7w).

b. Students' written reports checked by teacher bearing following comments: "Your report meets all the requirements set forth in the guidelines, as well as the criteria we as a class set up for neat penmanship, orderly arrangement, and an appropriate cover. 'A'" the grade designated by the teacher is an example of Expanded Category 2P.

"Your report was incomplete, since you did not include a table of contents or a bibliography. The outline was improper. See your guideline for an outline. 'C'" The grade designated by the teacher is an example of Expanded Category 7P.

c. Original poems submitted by students and evaluated by the teacher bearing following comments: "This is a lovely poem. I especially like your light, gay treatment of one of my favorite subjects." Evaluation includes a gold star signifying teacher's personal designation of excellence - Expanded Category 2p.

*** **Tables, Chairs, Shelves**

Function: Provide space for:

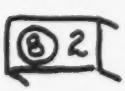
a. Students to display contributions for the teacher to evaluate student efforts; judges to view and evaluate contestant entries

b. Teacher to display examples of "good" versus "bad" items, fine products, models, ideals as standards of comparison

c. "Reward" corner for free-time activities, such as honors corner to be used following well-completed, correct work

d. "Punishment" corner for discipline problems, remedial activities for slow students to be used following poorly completed, incorrect work

Contents:



a. Student products, creations, contest entries, such as hobbies, models, collections, arts and crafts creations, etc., evaluated by ribbons, prizes, trophies, etc. (2P).

b. Student contributions designated as praiseworthy, such as well-constructed models; the neatest "coloring job," prettiest jewelry, largest, healthiest plants. May also include examples of poor efforts, student products used as means of comparison (2p).

c. Enjoyable, creative items, such as supplies, tools, reading materials, games, toys, comic books; punitive work or remedial materials, such as practice exercises to improve penmanship, drills, multiplication tables, information to be copied, traced, duplicated in order to complete assignments, correct spelling errors; resource items necessary for slow or delinquent students to "catch up" on uncompleted assignments

DIMENSION II - MATERIALS - Praise and Criticism (Categories No. 2 and No. 7)

* **Prepared Printed Items**

Function:

a. Provide means by which pupils may verify their acquired knowledge.

b. Means by which teacher can compare groups of students, measure progress, identify necessary remedial work.

Content: The evaluative function of any printed item depends on its use in the following two ways:

a. Source of absolute standard of correctness with which to compare and judge student acquired knowledge. Examples include factual references, informative sources.

b. Supplement or augment acquired knowledge (offers alternatives for correctness) with which students may verify understandings, improve skills, increase progress, apply concepts.

Types:

a. *Curriculum:* Teacher's manuals may include keys (example of correct-incorrect work, acceptable, unacceptable student answers), desired concepts, suggested outcomes, learnings; guidebooks or syllabus may include proper procedures, methods for organizing and completing content (of units, etc.); teacher's materials may include means of evaluating, grading student work, test correction devices, scoring techniques, such as grading on a curve, setting up progress graphs, etc. Pupils' materials include textbooks, workbooks, may include completed answer sheets (2w, 7w), means for correcting wrong answers or improper computations, remedying inappropriate habits, improving learning behaviors, such as study skills; examples of proper ways to organize content; teacher-developed and mimeographed copies of requirements, criteria set up by teacher to evaluate assignments; programmed texts, other individualized self-correction type materials.

b. *Resources:* Encyclopedias, dictionaries, newspapers, magazines, etc., may be used as supplements to compare conflicting information, increase concepts, verify correctness of student-acquired information; or consulted as authoritative sources (especially Category 2P).

** Audiovisual Aids

Function: Similar to Materials (see * above), provide authoritative sources by which information can be verified, duplications of products compared, concepts validated.

Types:

a. Curriculum-developed aids containing illustrations of proper methods for handling equipment, suggested procedures for work. Examples: step-by-step experimental procedures, reminders, suggested items to include in work efforts (2P)

b. Teacher-developed posters, charts exemplify correctness, personal standards of acceptance, illustrations of good versus bad behaviors. Examples: personally approved penmanship styles, How-to-organize-homework assignments, including the preferred placement of information, such as name, date, subject, page number; cartoon-type illustrations of manners, polite behaviors, classroom citizenship (2p)

c. Teacher-constructed charts of descriptive, evaluative data, include graphs, tables, containing such statistics as results of test scores, progress of pupils, honors lists.

*** Special Items

Function: Similar to Materials (see * above); items employed in accordance with precise, exact stipulations, the results of which are definite processes and/or products.

Types:

a. Objects, models used to identify examples of ideal products; function as comparisons for students' efforts. Examples: dress design in home economics, sculpture, pottery work, etc.

b. Teaching machines, individualized programming instruments, programmed equipment employed to achieve desired ends, may contain built-in reinforcers, self-corrective devices.

c. Tools, supplies, other manipulative items used in math, science; especially precise measurement devices, such as rulers, scales, weights, etc.

DIMENSION III - NONVERBAL BEHAVIOR - (Categories No. 2 and No. 7)

* Gestures

Functions:

a. Identify accuracy, inaccurate student responses.

b. Identify an outside authority as the source of evaluation; provide remedies for correcting inaccuracies (corrective criticism).

c. Convey signs of personal approval, disapproval.

Examples:

a. Teacher reactions that acknowledge the accuracy of a student's answer, such as waving, motioning to continue, for next person to respond, O.K.'ing (in writing) students' written contributions at chalkboard, holding up or pointing to praiseworthy student contributions (2w); reactions to inaccurate student responses, such as shaking finger at, tapping fingers, motioning for another student to answer, interrupting speaker by holding up hand, snapping fingers as signal to stop, correcting, erasing students' work at chalkboard (7w)

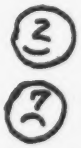
b. Recourse to authoratative materials as the sources of approval and disapproval, such as holding up texts, encyclopedias, pointing to audiovisual materials as a reference or a source by which students may compare contrib[illegible]ons; includes writing titles of reference items by whi[illegible]t may correct own errors; writing correct formulae, e[illegible]ubstitutions for students' errors. (2P, 7P)

c. Use of personal behaviors to convey agreement of opinions, disappointment, personal value judgments. Applause following student performance, any physical contact, such as patting student on back, hugging, shaking hands, close physical proximity; negative personal evaluations include physical punishment, restriction, showing the proper way to "do something," manually correcting physical posture of students, requiring students to repeat certain manual skills. (2p, 7p)

** **Expressions (facial, verbal)**

Functions: Similar to functions of Gestures (see * above).

Examples:



a. Reactions acknowledging accuracy of student's response, such as nodding, smiling, eye contact; reactions to inaccuracies include shaking head, frowning, signs of disinterest, such as looking away, biting lips, furrowing brow, signs of personal satisfaction or dissatisfaction (7p), such as smiling broadly, winking; grimacing, sarcastic smiles, sharp glances.

b. Verbal expressions include laughter, harsh or gaily light tones, shouting ahem, coughing

c. Sequence identifies interaction as the teacher reacting to student contributions; behaviors; includes sequences of teacher, plus student interaction or extended teacher talk.

1. A 4-8-2; 4-8-7 sequence indicates use of evaluation to identify the correctness, incorrectness of a solicited answer.

2. 5-9-7: 9-7 could be evaluation of unanticipated student behavior (may indicate a discipline problem)
3. Evaluation--2p-2p; 7p-7p--refers to some previous student behavior (may indicate personal value)
4. 7P-7P-7P-7P--extended explanation of public rationale: may indicate corrective criticism.

*** **Position, Movement, Posture**

Function:
a. Allow teacher to maintain authoritative distance
b. Movement permits viewing student contributions and behavior.
c. Posture shifts denote personal attraction, reactions.

Examples:
a. Group-focused activity involving the evaluation of information, such as teacher announcing, proclaiming grades, moving to source of information to evaluate, such as marking student's chalkboard answers
b. Contest in which judge moves among contestants or entries
c. Teacher's personal recognition of student contribution requiring approaching the student or item; personal criticism requiring negative approach (physical intimidation, threatening advancement) includes maintaining physical distance: postures, such as leaning toward, forward with interest, reclining, leaning backwards.

DIMENSION IV - EVALUATIVE ACTIVITIES - Praise and Criticism
(Categories No. 2 and No. 7)

Designed by teacher to provide students with an evaluation of the accuracy of their acquired knowledge and understandings or the appropriateness of their behaviors.

* **Uses Prepared Materials**

Purposes:
a. Identify (reward) correct answers and (criticize) incorrect answers (Categories Nos. 2w and 7w).
b. Identify (reinforce) publicly acceptable behaviors and (discourage) unacceptable practices (Categories Nos. 2P and 7P).
c. Identify personal evaluations (preferences, dissatisfactions) of students' contributions and behaviors (Categories Nos. 2p; 7p).

Examples:
a. Teacher reads, refers to curriculum items to validate student's answers, such as holding quiz key replies "O.K., good." to each answer read from homework paper. Includes announcing test grades, scores, honor role.

b. Teacher refers to outside authority, such as resource materials, audiovisual items, as source of evaluation. Teacher pointing to map says "Good, your map is almost a perfect duplication of that found in the encyclopedia."

c. Teacher refers to self, personally developed criteria, such as lesson plans, course requirements, syllabus, schedule as source of evaluation. Teacher, referring to own lesson plan, commends Johnny by saying "Fine job; your notebook is neat and complete" (you have met *my* criteria).

Pupils Use Prepared Materials

Purpose: Provide opportunity to verify understandings; note errors.

Examples:

a. Follow teacher's reading of correct answers; announcements of private, public criteria, standards for evaluation, rules of conduct, etc.

b. Read aloud the correct answers; quote such authorities as dictionaries, encyclopedias as sources of information; cite recognized printed sources, such as newspaper editorials, art critics, reviews, critiques, opinions of authoritative persons.

c. Use audiovisual materials to validate understandings; compare products.

Cues:

d. Independent use of automatic feedback techniques, such as confirmation, reinforcement, "KCR" (knowledge of correct response), utilized in teaching machine programs and other instructional materials that employ fixed sequence programs for building up mastery.

Cues:

a. A student interrupting another student to correct a mispronounced word, incorrect phrase, etc.

b. A student attempting to remedy incorrect or criticized behaviors, such as rereading mispronounced words, respelling incorrectly spelled words; redefining inaccuracies, such as descriptions, map locations, graph interpretations, etc.

** **Writes**

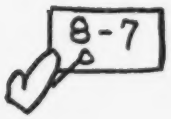
Purposes:

a. Allow teacher to identify (mark) correct and incorrect answers; supply corrections; offer possible sources of correct information; suggestions for remedying inaccuracies.

b. Offer a personal written evaluation, opinion, preference or value judgment; distribute copies of personal requirements.

c. Record indices of individual progress; means for comparing with other students' cognitive achievements; keep class record, information concerning the student as an individual—his intellectual capabilities, socio-emotional behaviors, general descriptions of his ability to function as a member of the classroom.

Examples:



a. Teacher checks individual students' answers (usually of the factual or convergent type), such as quizzes, tests, workbooks, homework exercises; group answer activities, such as chalkboard computations; spelling, punctuation, other sentence completion items; teachers' mimeographed copies of work requirements for attaining certain grades, personally developed course syllabuses; corrections substituted for errors in students' written answers. Students' misuse of data on subjective questions or in divergent assignments may be evaluated by referring students to a source that will clarify the inaccuracy. Example: (written by teacher on student's report) "Your data about the sequence of events leading up to the Revolutionary War are confused; consult the basic text to confirm your information" (Expanded Category No. 7P).

b. Personal evaluations may be appropriate for certain types of student contributions. Such personal comments may be substitutes for standardized grading techniques. If the student requests the teacher's personal opinion, it is felt that the teacher owes this student his honest appraisal. Also, in certain studies, such as seminars, arts and crafts, etc., when the conditions have been defined as subject to the instructor's taste, personal evaluations may be appropriate. Example: (statement accompanying student's poem) "Your style is reminiscent of ___; it lacks originality. You've gotten stuck in several cliches—I've circled these instances. I feel the poem would be much improved by the replacement of these with *your own* ideas." (Expanded Category No. 7p) Example: (comments made on art project portfolio) "The improvement you've made in figure drawing is commendable. Movement and grace of form are evident in the limbs of the acrobats in your sketches. The skeletal proportions of the figures are realistic and accurate. I'm pelased that you decided not to include background or distracting frills" (Expanded Category No. 2p).

c. Comparative evaluations of individual and group progress, as well as individual standings within the group include recording publicly announced grades, ratings, achievement test score results, ranking of names, grading on a curve, type techniques, report cards, progress graphs, tables or charts of other statistics, such as those concerning items missed on tests, amount of successfully completed required items (number of library

books read, etc.). These methods are usually limited to very concise, defined symbolic evaluations, such as letter grades, percents, raw numbers or brief terminology—good, fair, poor, etc.; personal data files on individual students include such items as personal statistics and numerical figures; examples: grade point averages, achievement and I.Q. test results; personality characteristics, emotional maturity or mental health forms; reactions of other teachers, principals, special subject supervisors. (2P, 7P)

Students Write

Purpose: Provide means for self-evaluating written work

Examples: Students mark own, other students' written quizzes, assignments, etc.; make necessary corrections on papers; comply with teacher's requirements by making necessary corrections; consulting sources of information and completing inaccuracies; keeping personal records of progress.

*** **Demonstrates (Teacher and Student Behaviors are Combined.)**

Purpose:

a. Provide opportunity for students to demonstrate skills and understandings; display products, all of which are judged.

b. Provide opportunity for teacher to evaluate students' presentations and/or contributions.

Examples:

a. A student demonstrates use of equipment, explains formulae, math computations; emphasis is on correct application of knowledge, theory.

b. Students display artistic creations, products for judging; perform for talent shows.

c. Teacher selects "best" student demonstration as exemplary (2w); may compare with nonacceptable demonstration (7w). May be corrective technique rather than purely evaluative—in which case the student will probably repeat the demonstration.

d. Contests, shows, talented and skilled performances, in which exceptional abilities and/or creations are rewarded, criticized, judged by group standards of excellence (2P) or teacher's personal standards (2p).

Cues:

a. A student re-enacting a demonstration following another student's poor performance

b. Students interrupting one another to correct errors

c. Group applause following student performances

d. Evidence of emphasis on proper techniques, such as stereotyped boardwork and workbooks, standardized penmanship skills; copying, comparing data with sources of evaluation

e. Structured art, gym, home economics activities in which use of equipment, supplies, products conform to model

f. Selection of pupils for desired positions on such criteria as good behavior, grades, pleasant appearances (if criteria are established by teacher (Expanded Category No. 2p); if criteria are established as group norm (Expanded Category No. 2P)

g. Reacting to praise or approval by smiling proudly, looking pleased in such ways as holding head up, blushing at extensive praise, approaching teacher with confidence, eagerness to participate when assured of correctness of response, behavior

h. Reacting to criticism or disapproval by displaying signs of unhappiness, such as furrowing of forehead, frowning, looking away, down, averting eyes, crying, fidgeting; signs of nervousness, embarrassment, such as biting lips, looking away, avoiding participation, blushing, fumbling with pencils, papers, books, chewing on pencils, fingernails, holding hands up to cover face, putting head down on desk, narrowing eyes, squinting, hesitancy to approach teacher, avoidance of other pupils' eyes, physical approachments, tendency to isolate self, hesitancy to complete assignments, hand in for evaluation, making excuses for incomplete work, avoiding turns to demonstrate, etc.; signs of competition for grades, praise, such as cheating on tests, assignments, nonsharing, competitive behaviors, mocking fellow students, showing off, currying teacher's favor, flattering teacher, fawning, seeking attention, copying teacher's manner or prescribed behavior, taunting students who are in teacher's displeasure, constantly looking toward teacher for signs of evaluation

ACCEPTANCE OF STUDENT IDEAS AND STUDENT-INITIATED TALK
(Categories Nos. 3 and 9i)

For purposes of nonverbal observation, student-initiated talk (Category 9i) has been redefined as any student contribution (verbal or nonverbal) that occurs without direct solicitation. Such voluntary student contributions include written items, concrete objects, models in addition to the originally defined student-initiated verbalizations. Both verbal and nonverbal initiations of this kind are seen as indicating increased pupil participation. Acceptance of such initiations indicates expanded avenues of teacher-pupil communication.

This type of acceptance is nonevaluative and includes many different verbal and nonverbal behaviors. Also the classroom, its arrangement and contents, offer extensive clues to Categories 3 and 9i behaviors.

There are several reasons for combining these two categories in this section. First, research has shown that the presence of student-initiated talk is greatest in those classrooms in which the teacher accepts student ideas. Therefore, these two behaviors may be related to one another in much the same way as are questions and responses. However, these two behaviors are distinctly different from the typical factual convergent question-answer interaction sequence that limits student response (Category 8). So that, secondly, student freedom to participate and/or express ideas (Category 9) is expanded by the teacher's use of divergent and evaluative questions. Thirdly, student-initiated behavior, unless it is disruptive, cannot usually be evaluated as correct or incorrect. Therefore, nonevaluative forms of acceptance offer more appropriate reactions to divergent, original student ideas than evaluative forms of praise and criticism. (Expanded categories identify nonevaluative forms of acceptance and can be found following this introduction. Fourth, since one purpose of Category 3 is to encourage students to express their ideas, evidence of such expression can be found in each of the classroom dimensions.

Indices of student freedom as opposed to rigid teacher control are offered by the following clues in Dimension I: Traditional classroom rows replaced by groups of desks to encourage communication and permit flexible rearrangements that accommodate a variety of activities. Contents of bulletin boards and display tables may be created, selected, or arranged by the students.

Material clues, such as handmade relief maps, posters, charts, scrapbooks, motivational reading series may indicate pupil selection and/or creation (Dimension II). Prepared curriculum materials or teacher-developed items described in previous sections may not be present. Thus, there may be a minimum use of content-oriented materials and less emphasis on achievement and evaluative techniques.

The use of nonverbal behaviors in Dimension III includes such teacher's gestures as pointing to, holding, otherwise acknowledging student contributions. Important is the use of facial expressions, such as eye contact to communicate interest in the speaker's idea (or presentation). Such acceptance may be differentiated from evaluative reactions by the extended duration of both the verbal and nonverbal behaviors (Example: prolonged eye contact).

Although research has shown that the two behaviors are interrelated, it does not appear to be the same order relationship as that found for questions and answers. It is not certain whether acceptance is more frequently a reaction to (follows) student-initiated talk or whether acceptance more frequently precedes Category 9i. Nevertheless, in this section the category of teacher behavior is presented before student talk. This order may appear reversed, since the expanded categories are obviously reactions to the students' ideas. However, since the content of the teacher's verbal behavior is the more readily identified of the sequence (the content of the student's behavior is less definable because its unpredictable quality eludes precise identification) and since the function of this category of teacher behavior is to promote interaction, it is presented prior to student participation. The expanded categories define three forms of acceptance.

3a Acknowledgment of student ideas, contributions (by *naming* the student, acknowledging, verbally or nonverbally *identifying* the student and/or his contribution)

3c Clarification of student ideas (by *rewording, extending* the content, implications of the idea)

3s Summarization of student ideas, contributions (by *collectively* acknowledging a number of different individuals' ideas; itemizing, reiterating key words; listing contributions at chalkboard, etc.)

Cues that indicate a particular subcategory may be offered by the duration of the verbal or nonverbal acceptance. For example, a slight nod may indicate a nonverbal acknowledgment (Category 3a), whereas clarification or summarization may necessitate more lengthy verbal or written reactions.

STUDENT-INITIATED CONTRIBUTIONS

Expanded categories of teacher verbal behavior are identified by content. There are no specific content cues that identify student-initiated verbal behaviors. Therefore, the following differentiations refer to *accompanying nonverbal cues* indicating that the student verbalization has been initiated. Also, since 9i occurs in the absence of direct solicitation by the teacher, the unpredictable nature of these behaviors is maximized. Therefore, the *content* is inferred from the *context* cues.

The following distinctions are made for purposes of nonverbal observation:

Category 9i may occur as:

1. A polite or acceptable interruption of the teacher, such as to seek assistance or request repetition of information

   Examples:

   a. Lecture activity (Dimension IV)
      Student initiates interruption
      Cue: Gesture - raises hand (Dimension III)

Teacher reaction—acknowledges, accepts student interruption (Category 3)

Cue: Nods, eye contact (Dimension III)

b. Silent individual seat work activity (Dimension IV)

Student initiates interruption

Cue: Physical movement toward teacher's desk (Dimension III)

Teacher reaction—acknowledges student's presence (Category 3)

Cue: Teacher looks up; smiles; eye contact (Dimension III)

2. An unacceptable or unanticipated interruption of the teacher or another student in which resistance or emotional upset is evident

Examples:

a. Lecture activity (Dimension IV)

Student initiates interruption

Cue: Gesture - raises hand (Dimension III)

Teacher reaction—indicates unacceptability of, displeasure with student interruption (Category 7)

Cue: Facial expression - frowns, stern face to discourage student (Dimension III)

b. Student-to-student panel discussion. Activity 9i-10-9i-9i-9i-10-9i Dimension (IV)

Emotional student interrupts

Cue: Facial expression - mouth expressing anger; content of verbal behavior emotional

c. Also unexpected or intense emotional expressions

Teacher reactions to such instances are presented in next section "Acceptance of Student Feelings" (Category No. 1)

3. An expression of a novel, creative idea (may occur as an extension of a more predictable response in which the student goes beyond the solicited answer and adds his own ideas)

Examples:

a. Student demonstration activity (Dimension IV)

Student is expressing novel method for operating equipment

Cue: Presence of equipment (Dimension II); extended individual student talk, use of gestures, central position in front of class (Dimension III)

b. Question-answer activity (Dimension IV)

Student response exceeds anticipated answer

Cue: 4-8-4-8-4-8-4-8 sequence becomes 9i (Dimension III) - unanticipated extended talk by an individual student.

Although these instances of student-initiated talk are the exception rather than the rule, in many "indirect" classrooms, the occurrence of such student behaviors may exceed the norm. The degree to which such types of student behaviors are present may be reflective indices of teacher permissiveness/control.

DIMENSION I - ROOM ARRANGEMENT - Acceptance of Student Ideas and Student-Initiated Contributions (Category No. 3 and No. 9i)

* **Seating**

Functions:
a. Provide flexibility for a variety of situations.
b. Encourage group cohesiveness and communication by minimizing authority of teacher, membership equality

Types:
a. Classrooms with nonstationary desks
b. Teacher's desk not necessarily in central location—may be indistinguishable from pupils' seating
c. Traditional rows may be replaced by circles, other provisions for special interest or ability groups. Desks may be replaced by chairs, tables, benches, mats, stools, rugs, etc.

Contents: Evidence of student-centered items or cooperative student and teacher efforts. Included are: variety of student-selected, arranged, or developed items; evidence of individually oriented rather than curriculum-dictated materials, personally designed book covers, notebooks, minimum of identical stereotyped texts, work materials (See Dimension II for details).

** **Chalkboards, Bulletin Boards**

Function:
a. Provide means for teacher to acknowledge student's verbal ideas by listing at chalkboard; acknowledge other than verbal contributions by displaying at bulletin board (3a).
b. Provide means for students to develop and present creative ideas; illustrate personal theories (9i).
c. Provide means for students to create and organize content; display own work.

Content:
a. Lists of diverse student ideas, suggestions (at chalkboard), displays of such student-originated items as poetry, creative art, writing (on bulletin board)
b. Individualized student ideas, methods, novel procedures, original solutions to problems (9i)

4-9

c. Student-created, arranged, or selected items may include themes that reflect the age group of the students; identify minority groups; indicate special ability or disadvantage groups; content may be irrelevant to curriculum.

Displays of student-written contributions may include diverse individualized style; incorrect use of language; reports with inaccurate information; problems solved via individualized nonstandardized procedures, original formulae.

*** **Tables, Chairs, Shelves**

Functions: Provide space and/or materials to

a. Promote independent, self-directed individual and group work; permit organization or reorganization for such student-directed activities as panels, debate teams.

b. Encourage special interests, creative endeavors, cooperative student-to-student activities, discussions.

c. Allow students to create, organize, and display nonevaluated contributions.

Contents:

a. Discovery-type materials and supplies, such as science, math, items necessary for student-directed activities; individualized reading materials

b. Creative supplies, such as arts and crafts, music materials; variety of free-time materials, games, toys, comics, scrapbooks; chairs provide space for interpersonal talks, committee discussions, place where friends can meet, teacher and students can confer.

c. Nonidentical, individualistic handmade student products show signs of originality. Student-selected and organized displays include personally volunteered items rather than assigned products; may be irrelevant to curriculum.

DIMENSION II - MATERIALS - Acceptance of Student Ideas and Student-Initiated Contributions (Category No. 3 and No. 9i)

* **Printed Prepared Items**

Functions:

a. Provide a variety of items selected by students or reflective of student interest; promote student involvement and self-directed participation.

b. Offer flexible curriculum items to meet individual student needs.

c. Provide resource items as informative sources or supplements, the content of which is utilized by students to investigate, interpret hypotheses; compare divergent or conflicting opinions; speculate about conclusions.

Types:

a. Materials reflective of students' interests include both cognitive and affective items; may be selected by students or in response to student interests and developmental stages. Use may be planned by students or arranged to complement students' awareness levels, individual ability levels. Content may be created by pupils, such as scrapbooks, collections of news clippings, cooperative, *committee*-created workbooks, texts, reports. Special interests may be pursued through library books, individualized materials, such as individually Programmed Instruction (I.P.I.); interest, ability groups may have special texts, workbooks. Student evaluative reaction forms, suggestion sheets, etc., may be used extensively as a means of revising content, reformulating plans, schedules.

b. Curriculum items—*teacher.* Minimum use of prescribed, restrictive, curriculum-developed materials, schedules, lesson plans, syllabuses, guidebooks, tests, course requirements; unstructured or flexible use of reviews, quizzes, questions; paucity of drill, practice exercises, such as penmanship, handwriting skills; rote memory exercises, workbooks, teacher manuals may contain concept-type guidelines or suggested behavioral goals for the teacher during student discussions, suggested teacher and pupil group activities such as cooperative planning, evaluation; readiness tests for determining individual needs, arranging groupings, planning work in special areas; enriched special ability materials; unstructured flexible lesson plans, tentative long-range unit plans; minimum of evaluative techniques, such as those found in preceding Section, Categories 2, 7.

Curriculum items—*student.* Items include discovery-type, inquiry approach materials; broad conceptual type guides for previewing, assessing, reviewing content; suggestions for activities, self-help study guides. Students may be involved in selecting materials, structuring content, planning use of such curriculum materials as texts, workbooks; constructing tests, planning experiments, demonstrations; preparing lesson plans, daily and long-range unit work and projects; individually participate in developing scheduling (Example: I.P.D.I.). Evaluative devices may be developed by students or may be replaced by individual self-assessment techniques; sociometric techniques may determine bases for group, work tasks.

c. Resource items reflecting student interests provide supplements or sources of information. The content is utilized by students to verify hypotheses; interpret divergent or conflicting opinions; speculate about conclusions. Emphasis on independent pupil-directed use of reference items for locating information, comparing diverse sources, clarifying opinions, drawing own conclusions by testing content. Newspapers, magazines, periodicals may provide divergent editorials, viewpoints, emphasis on student-discovered validity of the printed word.

** **Audiovisual Aids**

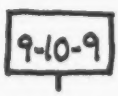
Function: Similar to printed prepared items (see * above)

a. Used, created by students to deliver reports, augment presentations.

b. Interpreted by students rather than teachers. Examples: students use graphs to discover the type of data represented therein—inductive rather than deductive uses.

c. Used by teacher as supplements to stimulate student discussions rather than as sources of information. Encourage student evaluations of such items as films, records, art work, pictures, etc.

Types:



a. One-dimensional posters developed and utilized by students to supplement reports and presentations. Examples: graphs, tables for research projects, data synthesis, *group* project murals, timelines, two-dimensional projections, relief maps.

b. Graphs, charts, tables, maps, sequence of events, flannel board figures, illustrations interpreted by students rather than teachers. Examples: comparisons of pictorial information contained in old and new maps.

c. Collections of pictures, portraits, other art items, films; may be selected, organized, and evaluated by students as being appropriate to course content or may simply be valued according to students' own personal criteria, preferences (may be noncognitive).

*** **Special Items**

Function: Three-dimensional manipulative objects, equipment, and supplies used by students to create, discover, experiment, demonstrate own ideas.

Types:

a. Nonmechanical objects, such as models, inventions, dolls, etc., may be created by students to augment their presentations; also created during free time (may be noncognitive); indicate diverse, original, nonstereotyped efforts.

b. Individually programmed machines and equipment encourage independent student operation. Include individually programmed teaching machines, such as Skinner, Pressy type, individually operated reading pacers, language laboratory equipment, viewing and listening equipment for slides, audio- videotaped recording equipment.

c. Individual manipulative supplies, such as those used in laboratories (science, math, chemistry, physics) for the independent discovery of principles). Also includes tools and items used in home economics, industrial arts; musical instruments, supplies used in creative endeavors, such as arts and crafts. Toys, models, dolls, wide variety of items to provide diverse avenues of expression and enjoyment.

DIMENSION III - NONVERBAL BEHAVIOR - Acceptance of Student Ideas and Student-Initiated Contributions (Category No. 3 and No. 9i)

* **Gestures**

Functions:

a. Used to acknowledge, convey interest in students' ideas, contributions.

b. Means by which students may indicate desire to participate, as well as actively participating

Examples:

a. Teacher motions for, recognizes student to participate, writes student's ideas at board, acknowledges contribution by holding, pointing to.

b. Student raises hand to initiate contact, interrupt teacher or other student during lecture, group discussions; manipulates objects, instruments in presenting novel methods, original ideas.

** **Expressions (facial, verbal)**

Function: Similar to functions of Gestures (see * above)

Examples:

a. Teacher acknowledges students' desire to participate by nodding, glancing at; acknowledging students' nonverbal contributions by same means.

b. Teacher's verbal acknowledgments may indicate expressions of excitement, interest; student voices may express eagerness, excitement (to participate, express ideas); hesitancy, slight stuttering when explaining own novel methods; argumentative, sharp retorts when reacting to opposing panel members; slightly proud, pleased when explaining personally developed ideas.

c. Verbal sequence indicates mutual teacher-pupil interaction; may identify type of student initiation and type of teacher reaction.

1. Sequence 4-9-9-9-3 might indicate divergent, evaluative question, followed by extended student response, which is acknowledged by the teacher.
2. Sequence 4-9-10-9-3 may indicate question responded to by two students followed by summarization by teacher.
3. Sequence 5-5-9-3-3 may indicate student-initiated comments interrupting teacher lecture, in which teacher modifies lecture to clarify or acknowledge student question; corrective interruptions by students followed by the teacher's acknowledging and correcting himself.
4. Sequence 9-10-9-10-3 may indicate student-to-student interaction, followed by teacher's summarizing, clarifying.
5. Sequence 3-3-3 may indicate extended acknowledgment of a students' ideas (refers to some past or previous instance rather than to immediately preceding student behavior).
6. Sequence 4-8-9-9-9 indicates a shift from a solicited predictable response to unanticipated content. Example: student answering "Christopher Columbus discovered America" and continuing on to add "but I believe that the Vikings landed in Minnesota long before that, so the Vikings really discovered America."

*** **Position, Movement, Posture**

Functions:

a. Convey equality of membership; allow students to experience a variety of roles, exchange places with teacher.

b. Permit free movement of students in accordance with individual needs, formation of groups.

c. Express attention to, interest in, acknowledgment of speaker.

Examples:

a. Class group discussions and committees minimize importance of authority figure so that teacher may assume other than traditional role—becomes group participant, consultant, observer; sits among, with students.

b. Teacher moves about room, approaches students in response to requests for assistance; students move about as individual activities require going to chalkboard, resource area, library, hobby clubs, extracurricular activities, special groups; approach teacher to request assistance, engage in personally pleasing activities, play with toys, games, etc. Includes instances of unanticipated student approach to teacher, being accepted, also student-to-student movement, leaving room, desk, to go to library, etc. Generally students appear free to determine own activities—do not look to teacher as authority or for permission to perform an action.

c. Teacher maintains eye contact with pupil when student is speaking, leans forward, conveying acknowledgment, interest; smiles, nods encouragingly, communicates acceptance, warmth (rather than approval); laughts *with* pupils, shares their jokes, observes reports, performances; conveys interest by asking pupils for additional information about their original ideas. Writes ideas at board; holds up, points to, displays pupils' contributions in a nonevaluative manner; generally appears to be comfortable with class; more concerned with them, their ideas than with self, own ideas, subject matter.

d. Pupils' eagerness to participate may be evidenced by attention, posture, eye contact, deliberate movements; may initiate communication with teacher by approaching desk, engaging in projects, group activities, interest in the contributions of their classmates; students rather than teacher may be the center of interaction; signs of pleasure at being accepted, such as smiling, looking sheepishly pleased, enjoying attention of group, blushing, eyes sparkling.

Category 9i includes a variety of student behaviors—some appropriate, some inappropriate. Remember, all student interruptions are included in this category. The following examples include different types of teacher reactions that offer cues to the type of student behavior.

Inattentive, Interruptive Student Behaviors	Teacher Reactions
Restlessness during class, whispering, yawning, impatience, losing temper in group, crying.	(If fearing disruption) may squelch by "7" behavior. May be verbal or nonverbal, such as glance, narrowing eyes; may smile understandingly and walk over to student to assist. (Category No. 3 and No. 1)

Anxiety, need for assistance during group work, raising hands, trying to get teacher's attention.	Teacher acknowledges need for assistance (3); ignores plea (7); gives directions of where to locate help. (Category No. 5 and No. 6)
Student tells joke, uses unacceptable language.	Teacher laughs with class (3a); is silent (10s); ignores (10s); censures (7p).

DIMENSION IV - IDEAS AND ACTIVITIES - Acceptance of Student Ideas and Student-Initiated Contributions (Category No. 3 and No. 9i)

Relatively unstructured, since activities are determined by student interests, needs, abilities rather than by curriculum demands or teacher goals.

Since teacher and students share responsibility for the interaction, a number of activities are not included in the previous more teacher-structured categories. Also, since one of the purposes of acceptance is to increase student participation, examples of student-directed activities are offered. These examples follow the regular presentation of the three types of activities—*, **, *** (see following pages). Student behaviors are not presented separately for each activity as in previous categories.

As mentioned in the introduction, it is difficult to determine the order of sequence of these categories of teacher-pupil interaction. So that if the majority of teacher behaviors occur as reactions to students behaviors (9i, 3), we might assume the activities to be somewhat student-directed. However, if the sequence is reversed, we might assume that the teacher-arranged activity resulted in certain types of student behaviors (3, 9i).

Examples of the teacher-pupil interaction are presented for each of the three activities in the following sequence:

a. Example of a teacher behavior that promotes student-initiated participation
b. Example of the resulting student-initiated participation
c. Example of the teacher behavior that occurs as a reaction to the student-initiated participation

Thus, the sequence is 3-9i-3. Expanded categories of the teacher's behavior preceding and following the student-initiated behaviors are identified when appropriate.

For the most part, the teacher reacts to all student-initiated behaviors in a somewhat similar manner. That is, the teacher accepts verbal ideas by clarifying, summarizing, repeating, rewording; accepts student contributions by acknowledging; does not evaluate any idea, contribution. Therefore, inaccuracies may exist. The teacher may purposely accept wrong answers, errors in speaking, reading, punctuating, recitations. There may also be evidence of diverse artistic work, such as incongruities or unrealistic artistic creations, such as red sky, blue trees, unusual themes, nonstereotyped contributions.

* **Uses Prepared Materials (Teacher and student behaviors combined)**

Purpose: Provide student with sources, supplements for cognitive or creative activities

Examples:

a. Teacher promotes student participation by reading, referring to printed content; uses audiovisual items to stimulate student participation. Examples: shows films of experiments, allowing students to speculate, draw own conclusions of phenomenon; cites conflicting printed sources of information; presents controversial pictures, curriculum resource materials; provides content with which students may validate ideas, compare data; quotes excerpts of "sensational" controversial news coverage, etc.

b. Students react to content, interpret, discuss, evaluate; read content silently, aloud. Examples: students locate sources, quote, argue, express opinions, cite sources to defend, support their positions, register opposition to other conflicting views.

c. Teacher reacts to student participation by clarifying, summarizing students' views; identifies conflicts, points of disagreement. Encourages consistent, logical thinking, proof of theories—"I heard Tom say he agreed with Walter Winchell but not with William Buckley" (3c). "Alice said . . ."; "Bob said . . ."; "Tom said . . . . so it seems that this team is in support of the minority program" (3s).

** **Writes (Teacher and student behaviors combined)**

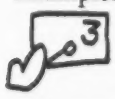
Purposes:

a. Teacher promotes student interest by recording, acknowledging students' ideas (3a).

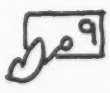
b. Students participate by contributing their ideas in writing.

c. Teacher reacts nonevaluatively to student-written contributions. May clarify, summarize content (3c, 3s).

Examples:



a. At chalkboard during discussion teacher records various student ideas, proposals.



b. Students explain ideas at chalkboard, write original, creative products, such as poetry; submit evaluations, proposals for activities, etc.

c. Teacher writes comments on student-written contributions as means of summarizing, clarifying students' thinking.

*** **Demonstrates (Teacher and student behaviors combined)**

Purposes:

a. Teacher demonstrations encourage student interpretations.

b. Allow students to participate in planning content; create novel means of expressing ideas. Encourage experimentation, critical thinking, development of problem-solving abilities.

c. Presentations arranged by teacher in response to students needs and interests.

Examples:

a. Teacher demonstrates principles of liquid measure by pouring water into various size containers, allows student to develop concept for themselves via discussion.

b. All similar self-discovery type demonstrations by students; all explanations of novel ideas, theories, speculations, approaches; group problem-solving conditions set up by teacher. Teacher provides following conditions: "You're allowed to take ten items to the moon—decide what you'd select on personal and group basis"; students form groups to discuss problem.

c. Student-directed activities, such as panels, debates; requested guest speakers, presentations; program demonstrations for special interest groups, hobbies, arts and crafts, talent shows, etc.

The following examples of teacher-pupil interaction are offered as activities in which student participation exceeds that found in the average classroom.

There appear to be three stages of classroom activity and three degrees of classroom control. The three stages of cognitive classroom concentration consist of:

1. Planning - content and activities
2. Presentation - content via activities
3. Conclusion - culminating activities and/or evaluating content, efforts, and progress

The teacher and pupils share various degrees of responsibility for each of these three stages each of which determines a type of classroom control. The teacher, an individual student, or the group may each be responsible for any of the above three stages. In the typical classroom the teacher directs all three stages with minor modifications, such as permitting individual students to present content (recitations); or scheduling group and committee activities (reports, work groups, demonstrations). The roles of the teacher in the following descriptions are rather different from those in the

traditional classroom. The teacher may become a member of a group, an *assistant* to a group, an *observer* of an individual's performance, a *consultant*, or an *adviser*. The role possibilities are exciting and varied. *However, one role he is not is an evaluator!*

The following explanations of the three stages of activity imply student-oriented rather than teacher-directed control of the classroom interaction. In these examples the students are given varying degrees of responsibility for the activities that occur. Therefore, they assume some part of the teacher's role in determining the classroom structure. The degrees of student independence and teacher control depend on a great many variables.

1. Planning Stage

   Purposes:

   Increase student commitment and interest by encouraging student participation in planning activities, structuring content, determining their own relationships to areas of study.

   Roles (Teacher and student)

   a. Teacher as consultant, guide identifies any framework, structure that may limit or influence students' suggestions. Reads, refers to, writes, distributes copies of course syllabuses, curriculum requirements, specifications, objectives, goals, text-manual guidelines; previously approved, currently proposed schedules, lesson plans, long-, short-term strategies; available committees, work projects, groups; possible topics, themes for reports, etc.

      Example: "We must cover this material in three weeks. Are there any suggestions for scheduling the work?" (Orientation)

   b. Students volunteer and submit suggestions, schedules, react to, support each others' suggestions, give options, opinions, alternatives to proposals, arrive at decisions; request group membership; form groups; relate to teacher as resource person. Examples of student participation includes planning:

      1. Activities — Field trips, organizing plays, museum trips, appointing committees, deciding on art, physical education projects
      2. Material
      2. Materials — Selecting ..... speakers
      3. Schedules — Activities ..... reports

   c. Teacher acknowledges student ideas via writing at chalkboard (role of secretary); clarifies student ideas via class discussion (role of moderator); summarizes group or individual suggestions (role of chairman).

2. Presentation Stage

Purposes:

a. Provide students with opportunity to participate in organizing and presenting curriculum content, determining use of materials; recognize the importance of organization in delivering content; provide direct experiences with equipment and supplies prior to theory and/or instead of printed content or lecture presentations.

b. Students create own content, props, novel theories, ideas to be presented; recognize importance of appealing to audience interests.

c. Allows for independent group work, the formation of special interest groups.

Roles (students)

a. Students prepare lesson plans, appoint committees to collect necessary items for group, review curriculum content, assign individual reports, collect materials and audiovisual items to supplement reports; form debate teams, panel discussions, lectures; outline content to be covered in their presentations, mimeograph copies to be distributed. Have spontaneous speeches, multigroup student-led discussions, buzz groups.

Students experiment with equipment, tools, supplies, individually or as a group, in order to discover phenomena, relationships, uses. Examples include modern math manipulative supplies, physical education equipment, musical instruments, painting techniques; also direct experiences with materials and excursions, such as laboratory method, field trips to local industries, nature walks, etc.

b. Student-directed presentations may be irrelevant to curriculum content. Include plays, recitals, artistic creations, talent shows, show and tell periods, as well as cognitive demonstrations of novel theories, explanations of creative ideas, solutions to problems. Students create own materials, construct posters, models, other items to supplement their presentations. Include visual representations illustrating theoretical ideas, proposed inventions (i.e., concrete representations of abstract processes). Examples: pictorial illustrations of the stages in human development; thought processes diagram; proposed formula for solution to a problem; blueprint of bridge construction; rocket launch site; model for group development.

c. Seminars, tutorials, independent studies, research, self-directed group projects, hobby clubs, problem groups designed to meet individual requirements (assistance by other pupils, etc.); use of self-pacing, self-instructional materials, extra practice skill exercises, conferences with the teacher.

Roles (teacher)

a. As *resource* person. Teacher, as resource person, makes supplies available, orders audiovisual equipment, arranges trips; explains prerequisites to operating equipment for work efforts; briefly identifies any dangers (of equipment) and rules for trip behavior; assists, guides students in use of equipment, if requested.

b. As *observer, member participant, chairman,* or *secretary,* takes notes on student presentations as means of acknowledging contributions (3a). May help summarize or clarify if student requests it. Examples: during debates, panels, other points of disagreement.

Summary of information contained in report (made for benefit of group) to confirm with reporter. As chairman, may terminate debate, select next speaker; as participant on panel, may provide information, suggest sources. Helps clarify novel inventions, may ask student to repeat or re-explain stage.

c. As *consultant,* responds to requests for assistance, helps organize, arrange groups, arranges for special equipment, points out sources of information. Helps students arrange flexible scheduling and consulting for individual needs, identifies possible courses of action—academic advising, available courses, etc. Demonstrates how to use special equipment, such as tape recorder, so that group can operate independently without teacher assistance. May provide feedback to group, as an observer, if requested by group; must be observable and measurable data rather than evaluation.

3. Conclusion Stage

Purposes:

a. Provide opportunity to summarize content; identify concepts.

b. Arrange culminating activity

c. Students evaluate own and others' progress, re-evaluate content and activities, identify meaningful learning for themselves.

d. Provide opportunity for teacher to evaluate over-all worth of such activities for her own records.

Roles (Teacher and student)

a. Teacher helps clarify and summarize content by referring to, focusing on students' contributions and presentations. Example: Pointing to committee's project, "Let's see if we can reiterate the steps in Tom's presentation by referring to our notes and the things Tom has displayed at the back of the room." Students conduct daily, weekly reviews of content covered, exchange notebooks, compare notes, make committee reports.

b. Teacher allows students to suggest and decide upon appropriate culminating activities. Acknowledges ideas at chalkboard as secretary; as consultant informs group of any unfeasible suggestions or the necessary supplies, arrangements to be made. Examples include group discussions, written reports, summations of content, knowledge, concepts, field trips, etc.

c. Students may decide on such means of evaluation as student-developed tests, games to complement individual presentations, group learnings, daily reviews, exchanges of notebooks, individual committee reports; include evaluating effectiveness, proposing changes, developing rating scales, forms on which various aspects of the project are evaluated, such as content, delivery, activities, materials. Students may discuss own, each others' presentations, ask group and teacher for feedback, personal opinions.

d. Teacher may assist with progress reports, developing tests, and/or scoring techniques. May participate in taking tests, help guide evaluations, content, provide feedback, assist in group grading efforts by identifying "things to consider"; provide audiovisual recording equipment as a feedback device, sociometric techniques to help students understand their roles as group members, how they influence others.

ACCEPTANCE OF STUDENT FEELINGS (Category No. 1)

Recognition of students' emotional expressions is rare. There seems to be at least two related reasons why this is the least-used category of teacher behavior. First, teachers (as well as many other people) often find emotional behaviors discomforting. They are often reluctant to react to such expressions. Secondly, most classrooms (as well as most social interaction situations) are *cognitively* rather than *affectively* oriented. Thus, teachers and students learn to view emotions as inappropriate classroom behaviors and are discouraged from openly expressing themselves (their feelings).

Students (especially adolescents and college age) resist communicating their personal feelings (appraisals of the teacher and the subject matter), since they are threatened by authority implications of the generation gap. Furthermore, they become increasingly aware of the importance of the teacher's personal feelings, ego in determining student appraisals, evaluations, and grading. These learnings are acquired continuously from kindergarten on and continue to broaden until the gap culminates in the following complaints registered by both factions: lack of ability to understand (the younger generation), inability to be understood (by the over 30s). This inability to understand, be understood by others transcends the generation gap to include differences among minority peoples, religious groups, etc. The need to remedy such interpersonal misunderstanding via increased acceptance and appreciation of individual differences is being recognized by many progressive educators. The acceptance of feelings (Category 1) may finally become a more prevalent behavior than heretofore in classroom interaction.

An explanation of the *functions* of Category 1 is helpful in understanding how such behaviors may eliminate interpersonal barriers and expand communication.

The primary function of this teacher behavior is to react to a student's expression of emotion with acceptance. This implies that the teacher is aware of the *content* of the student's expression. (He has heard what the student said.) Facial expressions and certain gestures constitute an important nonverbal means of communicating acceptance. Furthermore, such behaviors help identify the student's feelings (anger, fear, etc.), as well as the teacher's reaction (understanding, empathy, sympathy, etc.). This interaction seldom involves more than two individuals, although it may include a small group of students who are in disagreement with one another or with the teacher.

A second function of Category 1 has been developed for Nonverbal Interaction Analysis. It is to help students appreciate their own and others' feelings by encouraging the expression and discussion of their feelings. Clues to the teacher's concern with encouraging such expressions of feelings include the contents of materials, bulletin boards, and perhaps even the arrangement of the classroom.

In planning for group-focused affective activities, the teacher's personal style (i.e., the *content* of the teacher's verbal and nonverbal behavior) and the presentation of affective materials are important in encouraging honest, open communication.

Most of the dimensions described in previous sections have been primarily concerned with cognitive behaviors. The presence of curriculum materials and their use in content-oriented activities often discourage emotional freedom by ignoring their affective realm. The dimensions described in this section encourage affective interaction and the expression of feelings by recognizing the above two functions of Category 1 and by suggesting ways to implement these functions (Dimension IV - Activities). The Expanded Categories identify three forms of acceptance. The functions of each are based on the *content* of the students' emotional expressions. Depending on the student's feeling, the teacher's reaction should communicate one of several things. For example, the function of the teacher's reaction may be simply to acknowledge the student's feeling, help the student clarify, understand his emotional state, or reassure or comfort the student. The teacher should not lightly dismiss or be tempted to evaluate such emotional expressions.

The following expanded categories define three forms of acceptance of feelings:

1a Acknowledgment of students' feelings by *naming, identifying* the feelings (Purpose is to let students know you're aware of feelings.)
Examples: "You're very *happy* today." "You seem *angry*." "Everyone looks a little *tense*."

1c Clarification of feelings by identifying both the feeling and the *cause* for the emotion (Purpose is to help the student *understand* the reason for his feeling.) Examples: "Maybe you're happy *because* it's vacation time." "Perhaps you're angry *because* you weren't selected for the part you wanted to play." "This tension might be a *result* of the midterm exams."

1r Reference to a related situation or similarly shared feeling (Purpose is to reassure student that he is not alone; that others have felt this way; that it is *normal and natural* to have this feeling.) Examples: "I'm sure most school children are glad to see summer vacation arrive." "It's natural to be disappointed and angry when we don't get something we were counting on." "Studies of college students involved in exam situations show that the tension level is _X_ times as great as during the rest of the semester."

Similarly, these three dichotomies might prove useful in implementing the second function. Selecting materials and planning activities might be accomplished with the following three objectives in mind:

1a Help students become *aware* of their own and others' feelings by acknowledging (by identifying, naming a variety of emotions—both personal and those of other people).

1c Help class *clarify*, understand why people feel a certain way (by identifying causes of emotional states).

1r Help class recognize that it is normal to have feelings by *referring* to others who have *related* emotions (by identifying related contexts, situations, dilemmas).

DIMENSION I - ROOM ARRANGEMENT - Acceptance of Student's Feelings
(Category No. 1)

* **Seating**

Function: Permit and encourage interpersonal communication (verbal and nonverbal).

Types: Classrooms with flexible furniture, groupings, spacious rooms without traditional rows of seating; observation of and participation in encounter and awareness expansion groups.

Content: Blankets, mats, comfortable surroundings and accouterments; one-way mirrors, other observation facilities.

** **Chalkboards, Bulletin Boards**

Function: Provide space for exhibiting affective content.

Content: Stresses *people* rather than *events.*

a. Pictures of various emotional expressions, faces depicting joy, anger, sorrow.

b. Illustrations, photographs, paintings of various group relationships, interpersonal relations dealing with problems, facing dilemmas, making decisions; animals also provide appropriate subjects for study.

c. Displays of student contributions that stress such affective themes as poems, stories, pictures depicting personal feelings; student creative efforts that interpret or represent feelings via the written word; portrait, figure drawings; includes realistic and abstract art.

*** **Tables, Chairs, Shelves**

Functions:

a. Provide space to display, create items of personal value; religious, cultural, sentimental worth.

b. Provide settings for groups, interpersonal encounters, intense discussions, involved interpersonal communication. Provide room to explore and develop sensory awareness.

Content: Contain items of experimentation; items that assist in setting moods, such as records, films, musical instruments.

DIMENSION II - MATERIALS - Acceptance of Student's Feelings (Category No. 1)

* Prepared Printed Items

Functions:

a. Enlarge curriculum to include (increase awareness of) *affective* dimensions by providing content that focuses on people rather than events.

b. Stress current international crises and interpersonal conflicts that concern people by identifying contemporary problems, relationships, emotional upsets (individual and group).

c. Increase students' awareness of own emotions; sensitivity to and appreciation of others' feelings.

Types:

a. Curriculum items include texts that stress people, their past history, subsequent current existence (i.e., in terms of their conditions, living habits, etc.); minimize factual data, isolated statistics. Include such subjects as human relations, psychology; provide conditions within which students are able to propose solutions (Dr. Ralph H. Ojemann Mental Health materials), offer alternatives, develop personal commitments.

b. Periodicals include current magazines, newspapers that realistically present problems, political upsets and their consequences, contemporary trials and tribulations of co-existence.

c. Student selections include pupil-created or selected contributions that reflect sensitivity to others, identify personal emotions, feelings. Example: "My interpretation of happiness."

** Audiovisual Aids

Functions: Emphasize reality, visualize emotions; selected to induce feelings, result in strong emotional impact; increase visual awarenesses.

Types: Pictures expressing emotions (people rather than scenes), controversial themes; artistic creations reflecting heavy lines; bright colors; abstract interpretive art; recordings selected to appeal to auditory sensations increase awareness of sounds and their impact; filmstrips emphasize reality of war, poverty.

*** Special Items

Function: Encourage emotional interpretation and creativity.

Types:

a. Objects include unusual, bizarre items that encourage emotional identification as in role play, for example; items might

depict the characterization of purely theatrical emotions, such as comedy-tragedy faces, masks; crude objects, strange handmade items employed in religious rites and ceremonies.

b. Equipment includes items used in free form physical education, dance activities.

c. Supplies include artistic items, musical instruments used to express feelings, sensitivity, spontaneous creativity.

DIMENSION III - NONVERBAL BEHAVIOR - Acceptance of Student's Feelings (Category No. 1)

* **Gestures**

Function: Convey understanding, empathy, sympathy with students' feelings

Examples: Teacher relates by comforting unhappy child, such as hugging, patting, placing hand on shoulder.

** **Expressions (facial, voice)**

Functions: Similar to function of Gestures (see * above)

Examples:

a. Teacher acknowledges, relates by eye contact, smiling, nodding, showing interest; face may mirror students' emotions—joy, anger, sorrow.

b. Verbal expressions may be used to convey emotions; voice may remain unusually calm in reacting "objectively" to intense emotions; may vary depending on content of students' emotions.

c. Verbal sequence usually includes some kind of student-initiated verbalization. Examples follow:

1. The sequence 9i-9i-1a indicates the student has initiated an emotional expression, which is acknowledged by the teacher.
2. 5-1r-1r is a sequence indicating that the teacher is referring to feelings during a lecture.
3. Sequence 9i-10s-9i-9i-1c indicates that the teacher is allowing the group to react to a student's expression of feelings.
4. Sequence 1r-4-9-10-9 includes encounter, therapy groups or sessions in which leader asks members to identify, examine own feelings.

*** Position, Movement, Posture

Functions:
a. Positions convey equality, cohesion; seating encourages awareness of others
b. Permit free movement between class members (teacher to student, student-to-student).
c. Postures convey interest, empathy, understanding.

Examples:
a. Face-to-face seating arrangements minimize central authority figure; includes encounter groups, sensitivity, sensory awareness sessions.
b. Student approaches teacher with problems; group members approach others to comfort, assist.

c. Forward postures encourage open emotional expressions, intimate discussions, physical proximity.

Behaviors: Student behaviors that offer cues to climate of emotional acceptance.
a. Teacher encourages open expressions of feelings. These may seem inappropriate. Example: sticking out tongue, banging fists, yelling at classmates, loud laughter, dancing joyously about the room, encounter groups, sensitivity training.
b. Students identify with fictional characters in story or play by role playing such emotions as elation, sorrow, anger, joy, fear, pain.

DIMENSION IV - ACCEPTANCE OF FEELINGS - (Category No. 1)

Activities: Planned to occur whenever appropriate throughout cognitive units for the purpose of enlarging the curriculum; to include the affective. Include unplanned occurrences of both desirable and undesirable behavioral expressions of feelings.

* Uses of Prepared Materials

Purposes: Help students increase awareness of emotions; focus on people; identify personal feelings, experiences, and relationships.

Examples:

a. Teacher presents, reads, distributes personal accounts from history, current situations, diaries, biographies. Includes use of poetry, music, taped recordings of voices, films, pictures, other items that tap emotions and feelings.

b. Students interpret content of above items by referring to their *own* feelings, experiences; discuss variety of emotions. Examples: "Do you think Columbus felt fear, anger, hurt when his crew threatened to mutiny?" "What did the faces of the people in the film tell you about how they felt?"

c. Teacher reacts to students' discussions of feelings by acknowledging [(1a), naming], clarifying [(1c), helping identify causes], referring to [(1r), identifying similar feelings].

** **Students Write**

Purpose: Similar to Uses of Prepared Materials above.

Examples: Students write themes concerning feelings, such as "The Things I Love, Hate, Fear, Need . . ." "Happiness is _____." Includes creating poetry, writing songs, plays, dialogue, which identify (name) feelings.

*** **Demonstrates**

Purposes:

a. Allow student to investigate "inner emotions," express feelings via movement, dialogue.

b. Provide for gorup experiences; allow members to discover dynamics of groups.

Examples:

a. Conducts classes in art, music, dance, which emphasize appreciation of emotional expressions rather than the content, techniques, or the development of skills. Students share own feelings via written creations; react to classmates' contributions in terms of "how your poem made me feel," use of physical movements, facial expressions, postures, gestures; convey feelings, moods by nonverbal communication. Example: "How the music made me feel." Interprets others' feelings by role playing facial expressions, physical postures; conjecturing about orchestra leader's motives, artist's personality, temperament.

b. Teacher arranges for group activities to increase awareness of personal feelings and the effect of such emotions on interpersonal relations; "When I can't look directly at you, it's because I feel _____," awareness of own senses via silence, darkness, touch, smell; small group discussions of above sensations. Students react nonverbally to others in terms of "how that person made me feel, how I feel about him"; groups formulate suggestions for increasing own and others' openness, trust, helping relationships, awareness. Group members engage in role play, nonverbal pantomime, skits.

c. Teacher accepts the variety of feelings and interpretations expressed by class members by acknowledging, writing diverse emotional reactions at board (1a); helping students clarify perceptions, understand differences (1c); by referring to own and others' feelings (1r); intervenes to provide insights into interpersonal problems or emotions that may be blocking the group's development.

Teacher Reactions to Unplanned or Intense Emotional Expressions

These teacher behaviors occur as reactions to students' emotional expressions. All such students' expressions are categorized as 9i behaviors.

Purposes:

a. Communicate concern, interest, sympathy, empathy, understanding.

b. Sensitively convey the social acceptability versus the unacceptability of certain emotional expressions.

Examples:

a. The following is an unanticipated outcome of a planned group discussion activity. Students display signs of excitement, eagerness to share feelings, cite personal experiences, react to another student's emotional mood. Such intense involvement indicates increasing signs of sensitivity, awareness of others. Example: "Students discussing what we can do to make Mary feel welcome." In these cases the teacher will not want to discourage the students' behaviors, eagerness, concern and will tend to listen to, otherwise nonverbally acknowledge their emotions. However, in the following case the teacher may wish to take a more active role. Mary is an isolate and the class is having difficulty accepting Mary as a member. Mary expresses tension, anxiety, unhappiness, fear during the discussion. Teacher may wish to stop the interaction, continue in private with certain class members, or meet with Mary alone.

b. Students as a group express anger, annoyance, apathy. Teacher may try to help class understand why they feel this way (1c) or merely acknowledge their feelings (1a).

c. An individual student expresses emotions privately to teacher —fear, anger, rejection. Teacher may feel more responsibility toward helping this student clarify the cause of his problem (1c), reacts sensitively, listens, keeps trust. May discuss (with pupil's permission) similar feelings shared by another classmate (1r). Intimate teacher-pupil discussions may lead to teacher's revealing his own emotions (1r). Arrangements for member confrontations may help a student to clarify his own feelings about himself, others, or the group as a whole.

d. The teacher, as an accepting listener, may at times find it beneficial to identify certain nonacceptable emotional releases by helping the students become aware that the acceptability of most emotions (Examples: happiness, anger, fear) is dependent on the *situation* and the *manner* in which they're expressed. Group, teacher, and pupil discussions, private conferences may help identify these situations more closely. Continuous extreme emotional discharges may harm the individual, his rapport in a group, and the class activities, unless such instances can be used to an advantage.

SILENCE AND CONFUSION (Category No. 10)

Since this last category includes two diverse behaviors, the expanded categories are especially appropriate. This category is not descriptive of the teacher's or the student's verbal behaviors, but is instead indicative of the type of classroom situation and is a kind of summarization of the preceding sections. Thus, it includes several of the items found in each of the previously described categories. *Clue words* to the two different types of Category 10 are offered as follows:

10s	10c
Silence	Confusion
Single	Communication
Separate	Committees
Structured	Cooperation
Seatwork	Competition
	Clusters

Each of the two types of behaviors can be seen to have both positive and negative aspects.

The positive *function* of *10s* is to provide silence for individualized cognitive activites. Such activities may be identified by duration of silence or the sequence of interaction. For example, 10s preceded by a question may be a *cue* to "thinking time" necessary to produce a student response. *Clues* to 10s (individual seatwork activities) include:

Dimension I - Traditional row-by-row seating arrangements
Dimension II - Individualized materials
Dimension IV - Individualized reference work, writing, silent reading, activities

Category 10c, likewise, has a positive function if the standard definition for this behavior is altered. The original definition of confusion means the observer is unable to discern a single speaker or identify a category of verbal behavior. However, such instances do not always indicate discipline problems. *Nonverbal Interaction Analysis* has developed a secondary definition for such situations, since it does not depend solely on verbal clarification.

Clues to 10c activities include:

Dimension I - Clusters, groups of desks
Dimension II - Community supplies, committee materials, group projects
Dimension III - Closeness, physical proximity, movement

The negative aspects involve *extremes* of both subcategories. Such identifications may be based on the duration and sequence of the behavior, as well as on certain nonverbal cues. An example of a negative use of 10s may include extended periods of silence. These periods of

silence may indicate extreme teacher control and the restriction of pupil freedom, especially if accompanied by signs of individual pupil anxiety or if enforced by nonverbal teacher control behaviors, such as glares, "ahems," etc.

Negative 10c behavior might be *excessive* communication, indicating group conflict, confusion, or chaos. Identifiable cues might indicate such discipline problems as those resulting from confusion about the group's functions (i.e., pupils are not sufficiently clear about their roles).

Included for purposes of nonverbal identification is a second form of 10c behavior that is indicative of *individual confusion.* Invariably, 10c indicates group confusion. However, confusion in the form of perplexity is often an individual problem and may result from confusion about curriculum content or ineffective communication. Nonverbal *cues* to this sort of individualized confusion are such facial expressions as wrinkled forehead, quizzical glances, averted eyes; or increased signs of disinterest as might occur during lengthy lectures.

Differences between the two types of 10c are easily identified by the number of pupils involved and the teacher's behaviors. The sensitive teacher looks for signs of confusion. The alert teacher recognizes that individual students' nonverbal behaviors offer feedback. Indications that a number of students are confused might suggest that the teacher alter his present teaching style or at least acknowledge the students' apparent confusion. This is a fine time to try a category 1a behavior, "You seem to be consused."

DIMENSION I - ROOM ARRANGEMENT - Confusion, Silence (Category No. 10)

* **Seating**

Functions:
- a. 10s Permit individual silent seatwork.
- b. 10c Permit group communication.

Types:
- a. 10s Conventional class, with rows of stationary desks, teacher in central position
  Auditorium, television situations, demonstrations
  Examinations, study halls
  Library, research rooms
- b. 10c Classrooms with clusters of desks
  Clubs, committees, group projects

** **Chalkboards, Bulletin Boards**

Function: Provide space for exhibiting individual seatwork, assignments; cooperative group efforts

Content:
a. 10s Subject-oriented items, similar to structured items described in section for Category 5; 4-8-9.
b. 10c Conglomeration of items. Similar to items described in section for Categories 3-9i.

*** Tables, Chairs, Shelves

Functions:
a. 10s Provide space and materials for singular structured activities, such as individual remedial practice
b 10c Permit communication; cooperative, group-directed projects, committee work, debates, panels

Content:

a. 10s Skill practice workbooks, make-up tests, assignments, resource materials, drill exercises, practice items
b. 10c Shared or cooperative materials, art supplies, creative tools, supplies

DIMENSION II - MATERIALS - Confusion, Silence (Category No. 10)

* Prepared Printed Items

Functions:
a. To promote teacher-directed, individualized student work activities (Expanded Category No. 10s)
b. To promote independent student-directed group activities (Expanded Category No. 10c)

Types:
a. 10s Individualized seat work items include workbooks, texts, tests, written assignments for silent work activities; teacher-directed questions and problems requiring "thinking time" prior to student response (see sections for Categories No. 5; 4-8-9; 6).
b. 10c Group-oriented items include materials designed to promote communication, cooperation, such as reference books used as sources of comparison. Teacher provides problem-solving situations requiring cooperative, group efforts for solution.

** Audiovisual Aids

Function:
a. 10s Provide replacement for teacher's verbal presentation; promote structured, individualized use.
b. 10c Promote group reactions, discussions.

Types:

a. 10s Items that replace teacher talk include movies, television presentations, individual filmstrips, earphones, records, language laboratories (see additional items in sections for Categories No. 5; 4-8-9; 6).

b. 10c Group-focused items that encourage response include controversial pictures, films; abstract interpretive art, musical products (see additional items in sections for Categories No. 3-9i; 1).

*** Special Items

Functions:

a. 10s Promote individual or silent use of supplies, equipment.

b. 10c Promote shared or group use of experimental equipment, manipulative supplies, tools.

Types:

a. 10s Items used in duplicating teacher's performance; guidebook instruction, such as chemistry experiments, home economics, shop projects (see additional items in sections for Categories No. 5; 4-8-9; 6).

b. 10c Items used in such group productions as murals, plays, contests include musical instruments, toys, games, arts and crafts materials (see additional items in sections for Categories No. 3-9i; 2-7).

DIMENSION III - NONVERBAL BEHAVIOR - Confusion, Silence (Category No. 10)

* Gestures

Functions:

a. 10s Gestures related to the structure of the activity include writing, following directions, manipulating tools, reading, holding book (see examples in sections for Categories No. 4-8; 6).

b. 10c Individual gestures may communicate confusion, such as raising hand during lecture to clarify, seek assistance; other gestures include those found in group activities (see examples in sections for Categories No. 3-9i; 1).

** Expressions (facial, verbal)

Function:

a. Facial expressions minimized during silence; such nonverbal expressions as furrowed forehead, squinted eyes, averted glances, cocked head, quizzical looks may indicate individual confusion.

b. 10s Verbal expressions absent;
10c Verbal expressions may indicate anger, confusion, excess communication, chaos.

c. Verbal sequence includes the following examples:

1. 10s-10s-10s-10s - Extended silence may indicate individual activities, such as test situations, assignment completions.
2. 4-10s-9 - Brief silences may indicate "thinking time" following a question; allowing for computation of math problem (4c-10s-8c).
3. 5-5-10s-5-5 - Brief silences during lecture may provide emphasis.
4. 5-5-10s-10s-10s - Extended silence during lecture may allow students to copy information, take notes.
5. 10c-10c-7-7 - Sequence may indicate discipline problem.

*** **Position, Movement Posture**

Function: and Examples:

a. 10s Teacher's central position, movement, posture designed to maintain silence, enforce structure, such as in examination situations, individualized work activities; includes individual movements, such as going "silently" to "posts," work areas, chalkboard.

↑
9-10-9

b. 10c Class members' positions, movements, and postures designed to facilitate communication and encourage free movement, such as committee activities, *group* projects that require circulating around room to discuss problems, use or share supplies; committee "buzz" groups.

DIMENSION IV - ACTIVITIES - Confusion, Silence (Category No. 10)

Designed to promote individual silent work (Expanded Category No. 10s) or encourage group participation (Expanded Category No. 10c).

* **Uses Prepared Materials**

Purposes:

a. Provide extended periods of silence for individual seat work activities; brief silences for interaction activities (10s).

b. Promote group activities (10c).

Examples:

a. Silent reading assignments, using curriculum materials, library period; "thinking time" following a question used to locate information in printed source, mentally recall, compute answer.

b. Cooperative sharing of materials, comparing information, committee planning, problem-solving activities requiring group discussions.

** Writes

Purposes: Similar to "Uses Prepared Materials" in * above.

Examples:

a. Students complete individual written assignments, tests, workbook exercises; following question, compute math problems, formulae before responding. Complete information at chalkboard, copy information from chalkboard, etc.

b. Group cooperative projects requiring writing, problem-solving situations, puzzles, riddles, competitive group solutions.

*** Demonstrates

Purposes: Similar to "Uses Prepared Materials" in * above.

Examples:

a. Individual nonverbal use of supplies, tools, equipment, etc.; activities focusing on individual members' nonverbal presentations.

b. Group demonstrations, panels, debates, games requiring confusion, mass movement; art activities necessitating movement and sharing of supplies; group productions such as plays, talent shows, class talent programs.

CHAPTER IV

USE OF THE NONVERBAL INTERACTION ANALYSIS CODING SYSTEM

Chapter II presented the fifteen symbols that comprise the four dimensions of the Nonverbal Interaction Analysis observation system. Chapter III presented these four dimensions of the teacher classroom behavior as they relate to each of the 10 Interaction Analysis categories of verbal behavior. Both Chapters II and III offered numerous examples of nonverbal coding. Chapter IV explains in depth the use of the Nonverbal Interaction Analysis coding system. Chapter IV also answers questions about the methods, procedures, and techniques of observation. The chapter is arranged in six sections, each dealing with a separate question.

QUESTION NO. 1: Why Observe? - Objectives of Observation

The ideal situation is one in which the teacher *chooses* to be observed. The choice may be based on professional interest in promoting educational research or on personal curiosity about one's own behavior and/or the behavior of pupils.

In the first instance the teacher may or may not be concerned about the results of the observation. However, in the second situation, the teacher is probably very much concerned with receiving feedback about the classroom behavior. The purposes may include studying or evaluating effectiveness, interaction, use of materials, etc.

Several possibilities for providing this feedback are: the use of video- or audiotape equipment, plus a variety of observational techniques. Ratings and descriptive comments also provide a different type of feedback.

The use of *playback equipment*, such as audio- and/or videotape recordings, *provides exact replications* of the original behavior. The use of *observational techniques provides representations* of the original behavior. The use of *rating forms and comment sheets provides evaluations* of behavior. In addition, many observational techniques provide a means of analyzing and interpreting behavior. Such analyses are less objective than exact replications, more objective than evaluations or reaction sheets, and can be used in conjunction with audio and video replay devices.

Reasons why NVIA is a satisfactory tool for studying the classroom include:

1. Nonverbal Interaction Analysis is based on an already researched observational instrument– Interaction Analysis.
2. NVIA procedures are easily acquired (especially if the observer is already familiar with Interaction Analysis)

3. The system provides a quite complete picture of the classroom (verbal plus nonverbal dimensions)
4. NVIA is flexible enough to suit the demands of a number of different situations (research, pre- and in-service teacher training, behavioral studies programs)
5. The system can be used with videotape equipment and other hardware.

Since the nonverbal system is in its infant stage, it is quite flexible and open to adaptation. It is hoped that Nonverbal Interaction Analysis will be able to answer many of the requests for a complete observational instrument. Decisions about "how, when, whom" to observe are yours.

QUESTION NO. 2: How to Observe? - Methods of Observation

The methods of observation described in this section are basically of two types. The most common is *immediate* (or live) observation. The second type is *delayed* (or taped) observation. The choice of which method to use depends on several factors. A primary consideration is the availability of observational equipment and the availability of trained observers. Another is deciding to whom the feedback will be given. Except in the case of purely research-oriented objectives, it appears crucial that the teacher receive the feedback either by way of videotape replay or by an objective analysis of the observational data. Feedback is one of the primary functions of Nonverbal Interaction Analysis.

A major difference between the two methods of observation is the procedure by which the data are collected. Immediate observation depends on the use of live observers. Delayed observation depends on the use of video (or audio) equipment.

A major similarity between the two methods concerns using the NVIA system to objectify the recording and analysis of data collection. Nonverbal observation procedures include several of those developed for Interaction Analysis.

Interaction Analysis has employed both the immediate and the delayed methods of observation. Since Interaction Analysis is primarily interested in verbal behaviors, audiotape recordings have sufficed as delayed observation. In recent training programs, combining Interaction Analysis with Microteaching, videotape equipment has been successfully used in studying nonverbal behavior. (See SKIT reference materials, "Data Collection," Page 191.)

Therefore, NVIA use of videotape equipment to record the nonverbal dimensions is similar to Interaction Analysis use of audiotape equipment to record the verbal dimension of the classroom. Likewise, Nonverbal Interaction Analysis immediate observation procedures are similar to Interaction Analysis. The exception is the possible use of multiple observers and isolation conditions necessary for recording strictly nonverbal data.

To some extent the choice of method determines *who* is able to observe as well as *when* and *what* to observe. The objectives of the observation may be the most significant consideration in determining whom, what, and when to observe. Observational objectives determine the *amount* of descriptive information (complexity of data) desired as a product of the observation.

Since immediate observation necessitates the use of live observers, the accuracy of the descriptive data is dependent upon their skill. Furhtermore, the live observer must be able to collect these data during a single observational session, whereas taped observations can be replayed many times, thus increasing the reliability of the descriptive data. Nevertheless, an observational system is still a desirable means of *focusing* the data collection and objectively *analyzing* the recorded data. Since each method has both advantages and disadvantages, the following are offered for your consideration:

DELAYED OBSERVATION

1. Advantages
   - A. Increases reliability and objectivity of data collection.
   - B. Provides a tool for training observers.
   - C. Provides a permanent research record; allows for comparisons with future observations.
   - D. Replay increases the number of possible observers.
   - E. Replay allows for concentration on specific dimensions; the elimination of audio provides strictly visual (nonverbal) data.
   - F. Exact replication of behavior allows for self-observation and self-analysis.
   - G. Provides basis for (nonevaluative) supervisory conference.
2. Disadvantages
   - A. Requires specialized equipment, operator, and perhaps facilities (room); scheduling problems for equipment, etc.
   - B. The camera is not able to pick up everything at once; tends to focus on teacher at expense of students and vice versa.
   - C. Replay may be threatening, especially if the videotape is accessible to persons in authority positions (e.g., principla, supervisor, etc.); when viewing replay, the observer tends to be concerned with such unimportant details as physical appearance (Is my slip showing? Am I fat? etc.).
   - D. Analysis process is time-consuming since it necessitates replay.

IMMEDIATE OBSERVATION

Advantages and disadvantages of Immediate Observation are concerned primarily with the observer's skills and accuracy. If live observation offered an infallible, computerized, complete analysis of the classroom, there would be less need for video replay. In addition to the margin of human error, however, the complexity of data defined as the observational objectives may necessitate the use of more than one observer. Therefore, the following are possibilities for utilizing multiple observers:

1. Comparisons among individual observer's data increase reliability.
2. Separate observers may be assigned to collect the verbal and nonverbal data.
3. Individual observers may be assigned to cover separate NVIA dimensions.
4. The recording of strictly nonverbal behavior may be arranged by isolating the observer in a separate observation room or by using some kind of audio-elimination device.

Suggestions for Combining the Two Methods of Observation

The advantages of both methods may be maximized in a program utilizing both immediate and delayed observations.

1. Use of the *delayed method* of videotaping to *introduce* the Nonverbal Interaction Analysis system:
   - A. Increases the observed individuals' self-awareness.
   - B. Increases the observer's accuracy.
   - C. Increases the analytical abilities of both individuals.
2. Use of the *immediate method to practice* live observational skills.
   - A. Two or more observers, plus audiotape replay, extend observer skill and awareness and decrease dependence on video equipment.
   - B. Comparisons among observers increase reliability.
   - C. Single observer finally is trained to analyze data independently with the teacher.
3. Use of *both methods for self-observation and analysis encourages independent behavioral research.*
   - A. Teacher observes self–via audio- or videotape, plus an objective observational system.
   - B. Teacher states own objectives; independently analyzes results via audio-, videotape, plus observational system. Compares actual behaviors with stated objectives.
   - C. Teacher keeps periodic log, record of behavior, interaction; may include principal and colleagues.

4. These methods may be extended to include teacher and student self-observation.

   A. Teacher instructs students in the use of a systematic observational technique.

   B. Teacher and students observe and analyze their own behaviors and interaction.

   C. Teacher and students may develop their own system of observation to meet their particular demands.

QUESTION NO. 3: When to Observe? - Scheduling an Observation Session

The answer to this question may depend on which of the observational methods is being used. Ideally, the teacher schedules an observation session in conjunction with specific objectives. (For example, the teacher may be interested in receiving feedback about her teaching behavior during a particular history lesson. Thus, the observation is scheduled to coincide with that history class.) The duration of observation in such case may depend on the length of that history class. Interaction Analysis procedures indicate twenty minutes as an appropriate period of observation.

Arrangements for videotape facilities are usually required in advance. Likewise, arrangements for observers may be necessary. Self-observation via audiotape requires the least advance preparation. It is suggested that the teacher and students be notified of any observational sessions requiring outside observers.

The aforementioned request by the teahcer is but one possibility for scheduling observational sessions. Variations depend on grade levels, subject areas, teacher and student objectives, and staff development program policies.

Additional possibilities are offered by the following:

1. Several observational sessions may be planned for certain periods during the school year (e.g.: beginning, mid, end of term, etc.).
2. Observations may be scheduled to comply with specific points in the development of a subject area (e.g.: introduction or review of unit of work).
3. Several observations may be made of the same teacher with different groups of students (e.g.: observations of a teacher in a specific subject area interacting with different classroom sections during the day).
4. Several observations may be made of the same group of students with different teachers or during different activities (e.g.: observations of a certain high school class section changing classroom teachers and/or activities during the day).

5. Several observations may be scheduled during the semester to allow teacher and students to compare their progress in acquiring behavioral awareness.
6. Observations may be scheduled pre- and post-learning the NVIA system. (Research objectives: Does a teacher's behavior change with learning about teaching behaviors? Does behavioral change accompany increased self-perceptions?) Such observations may be scheduled for the beginning and end of a college pre-service teacher-training program; also during in-service teacher-training programs.

QUESTION NO. 4: Who Should Observe? - Data Collection and Feedback

This answer depends on the observational objectives and the subsequent use of the data. Three special interest groups may formulate three different types of objectives, thereby influencing the decision about who should observe. The following three interest groups are identified in terms of their objectives:

1. Research interests

   OBJECTIVES: Define educational problems.
   Develop techniques for educational improvements.

2. Teacher-student interests

   OBJECTIVES: Study own behavior.
   Develop means of self-improvement.
   Develop means of improving teacher-pupil, pupil-pupil interaction.

3. Observer interests

   OBJECTIVES: Study classroom behavior.
   Increase awareness of such individuals as those in groups Nos. 1 and 2 above, also supervisors, special program developers, parents, etc. All these groups may find that NVIA increases their understanding of the classroom.

Special interest groups' objectives may determine the method of observation and the subsequent use of the data (i.e., who observes the original interaction and who observes the replay of the observation?).

The following examples identify the observers in terms of each one's observational objectives:

1. Team of research observers collecting data for an organization conducting a research project.

2. Independent observer collecting data for his own use, such as dissertation or thesis study
3. Teaching staff trained in observing other teachers (each other) for purposes of studying various teaching behaviors; novel approaches to teaching specific content areas, such as social studies, unit method, recently adapted science, modern math programs, etc.
4. Supervisor or principal conducting observations for in-service teacher-supervisory conferences; or during a college student teaching program
5. Educators (in-service, pre-service) observing filmed classrooms for purposes of discussing, analyzing behaviors, or interaction
6. Teacher and students formulating own behavioral objectives, observing and analyzing interaction via replay feedback and discussion (may develop an observation instrument to suit their own specific needs)

The teacher has been included in all but the first two instances. The author feels that the teacher is the single most important individual in classroom study. The last example refers to a recent innovation in studying classroom interaction. C.I.A. (Children's Interaction Analysis) is an instrument designed to increase students' behavioral self-awareness, sensitivity to others, and knowledge about interpersonal relationships and classroom interaction.

The following descriptions explain the observer's responsibilities for each of the two methods.

The Role of the Observer in Immediate Observation

Since the accuracy of immediate observation depends on the observer's(s') skill in recording data during a single session, the decision must be made whether to use one or more observers. Possibilities include:

A single observer recording both the verbal and the nonverbal data

Two observers—One recording the verbal data and the other recording the nonverbal data (the latter observer may be isolated or restricted to purely visual data)

More than two observers for such purposes as interobserver reliability checks, observer training, extensive data collections, extended observational sessions, etc.

The decision about the number of observers may depend on the observational objectives. Several observers, each recording the *same* dimensions, provide for data comparisons, which are especially beneficial in an observer training program. Several observers, each recording a *different* dimension, provide for comparisons, such as between verbal and nonverbal data, among dimensions, etc. In addition to the factor of increasing observer accuracy, the complexity of data required may determine the number of observers. The number of dimensions usually determines the amount of data. However, certain aspects of the classroom situation may also influence the "complexity" of the observation. Included are such characteristics of

the teaching-learning situation as the size of the class, the students' abilities, interests, and relationships with the teacher, with one another, and their attitudes toward observation. The teacher's level of self-awareness, familiarity with the observational instrument, relationships with students, amount of inconsistency in behavior patterns, personal style, degree of structure, flexibility, mannerisms, attitude toward the observer, and observation are also important. The classroom setting—type, amount, and variety of activities, changes in grouping, rearrangement of classes, availability of materials, types of lessons—may also be a factor. Multiple observers may be desirable during extended observations requiring "relief" observers.

The single observer may be satisfactory in a situation that includes the following conditions:

1. Expert observer (accuracy)
2. Teacher and students familiar with observational system (awareness)
3. Defined data focus (observational objectives of observer and/or teacher limited to precise dimensions)

Maximum observational description includes all four nonverbal dimensions, plus the verbal data. In such case the single observer is responsible for collecting a great amount of data. The following suggestions may help increase accuracy:

1. Tape record the classroom interaction. This allows for concentration on the nonverbal during *immediate* observation; concentration on the verbal during *delayed* observation. (This should be done as soon as possible so that the cues to the verbal behaviors are still vividly in mind.)
2. Modify the three second recording rule to a longer-time interval such as 6, 9 seconds.
3. Modify the suggested 20-minute observation to a briefer period such as mini, micro session.
4. Cease recording verbal data during such extended verbal behaviors as lecture and concentrate exclusively on the nonverbal data. (Note the exact time, the minute and second, at which these extended verbal behaviors began and ended. A stopwatch may be helpful.)

Isolation of Nonverbal Observer

If two observers are used, it may be desirable to restrict the nonverbal observer to solely visual cues. This can be done by placing the nonverbal observer in a glass-enclosed booth or a room with a one-way window. Ear plugs or other audio restrictive devices may also be used. Such provisions make the nonverbal observer totally dependent on visual data.

Advantages of Using a Single Observer

1. Limited availability of trained observers

2. Less costly
3. Inconsistencies between verbal and nonverbal behavior may be more apparent to one individual; categorization of the "contents" of verbal and nonverbal behaviors is more reliable.
4. Less distracting to the class—the students and the teacher. It is suggested that the observer who is a stranger to the class creates less of a barrier than does the familiar observer who might possibly be biased. The unfamiliar observer creates less threatening conditions than might be created by principals, supervisors.

Advantages of Using Two or More Observers

1. Comparisons increase observational validity; also increase interobserver reliability.
2. Allows one observer to concentrate solely on the verbal data and the other solely on the nonverbal data; allows the observers to share responsibility for the dimensions on which they'll each collect data.
3. Inconsistencies in the teacher's behavior may be verified by observer consensus. Allows for analysis of different data collections; among numerous dimensions.
4. Decreases the possibility of observer bias—this is especially important if one of the observers is a supervisor, principal, etc.

QUESTION NO. 5: Items Constituting the Data to be Recorded

Since the purpose of any observation is to *describe*, this question identifies the various information constituting such descriptions.

The classroom can be described in a multitude of ways. The interests of research, the objectives of the teacher, the development of observer skills may each be factors that determine the observational focus. Educators do not always agree on the descriptive focus or the means by which observations are conducted.

The three special interest groups may or may not be compatible in assessing priorities of classroom description. Therefore, this question will present three different foci in accordance with these three special interest groups:

1. Research interests
2. Classroom interests (teachers and/or students' objectives)
3. Observer interests
   A. Subjective (evaluation)
   B. Objective (description)

The most accurate classroom descriptions are based on measurable DATA. Included are such measurements as the size and shape of the room; its contents—physical descriptions that include furnishings, presence of materials, number of pupils, appearance of teacher, and testing results. Studies of such types of isolated data are easily conducted and the compilations quite readily accepted. In such studies, simple research demands and introductory observer training needs may be served.

More difficult studies are those that attempt to identify relationships among the aforementioned elements of the classroom, as well as many additional interrelated variables. These *relationships* are important in describing the *total* classroom. Since the teaching-learning situation implies interdependence among persons and objects and necessitates interrelated actions and activities, the following components represent one possibility of a completely descriptive formula:

Teacher + Students + Classroom Furnishings
+ Materials + Verbal Behaviors + Nonverbal Behaviors = Classroom Interaction

Here, then, is the WHAT—a formula containing the individual data components needed to describe the classroom. As previously mentioned, the complexity of the data required by the observation determines the extent to which the components of this formula are applied. Various components can be isolated or combined without the inclusion of others, since each descriptive dimension is somewhat mutually exclusive.

The following examples are offered as only a partial list of possibilities. These descriptions selectively focus on the various verbal and nonverbal dimensions as developed by Interaction Analysis and Nonverbal Interaction Analysis. A description of the classroom may focus on the:

1. Verbal behavior of teacher and/or students
   Data consist of categorizing ten individual verbal behaviors, and the interaction among these behaviors (see Interaction Analysis procedures, Appendix A) may include categorizing the contents of certain subcategories of behavior. (See thirty expanded categories of Interaction Analysis.)
2. Nonverbal behavior of teacher and/or students
   Data consist of categorizing individual nonverbal behaviors and the interaction among these behaviors. (See Nonverbal Interaction Analysis, Dimension III.)
3. Classroom arrangement
   Data consist of identifying physical arrangement of the classroom and its contents. (See Nonverbal Interaction Analysis, Dimension I, Chapter II.)
4. Materials and supplies
   Data consist of identifying presence of items according to their contents using Interaction Analysis Category numbers. (See Nonverbal Interaction Analysis, Dimension II.)

5. Activities
   Data consist of combinations of data in 1 and 4 above; i.e., verbal and nonverbal behaviors occur in conjunction with using certain materials and take place in a particular setting—all of which results in a describable type of action. (See Nonverbal Interaction Analysis, Dimension IV.)

The above foci are broadly based on each of the Nonverbal plus Verbal dimensions. Other narrower data collections may meet demands of more specific observations. The following offer more defined foci, which limit the classroom description to:

1. Types of teacher questions as related to pupil achievement; as related to the teacher's ability to vary her questions and promote a variety of student responses; as related to pupil preference and the extent of pupil participation (see Expanded Categories of Interaction Analysis—four levels of questions and responses).
2. Comparisons among the personal styles of a teacher during an art lesson, history lecture, science discovery lesson (data consist of verbal, nonverbal behaviors used in conjunction with certain materials, activities)

Any description should be partly determined by the level of *awareness* of the person to whom the description is being made. The beginning teacher who has been trained in using the NVIA is able to hear a different type of feedback (receives a different picture, description) than is a twenty-year in-service teacher who is not familiar with the use of observational techniques. Likewise, each of these teachers has a much different level of awareness of classroom behavior than does the recently graduated school psychologist or the assistant administrator straight out of a Ph.D. program who has never been in the classroom.

Thus, *what* to observe might depend on for whom the data are intended. (See Question 4—To whom the feedback is given). If the teacher and students develop their own behavioral objectives, then the observational focus should be concerned with collecting the data as identified by these teacher-student objectives.

In the case of immediate observation, successful data collections require objective observers with much the same predispositions as classic researchers. Unbiased observers are more likely to record purely descriptive data. The live observer attempting to employ the total NVIA observational system is responsible for recording all verbal plus all nonverbal data.

The data recorded by the single observer include:

1. Description of the classroom by noting the presence and location of furnishings and materials—also information about the lesson, teacher, grade, etc. (Dimension I and II)
2. Description of verbal interaction by classifying the content and sequence of teacher and pupil statements (Interaction Analysis verbal observation coding procedures)

3. Description of sequence and duration of nonverbal behaviors by classifying teacher and pupil movements, gestures, expressions, etc. (Dimension III)
4. Description of teacher and pupil use of materials to supplement or replace verbal, nonverbal behavior (Dimension III)—also the use of nonverbal behaviors as supplements, replacements for verbal behaviors (Dimension III)
5. Description of classroom activities as identified by materials combined with verbal, nonverbal behaviors, simultaneous teacher, pupil behaviors that result in identifiable activities (Dimension IV)

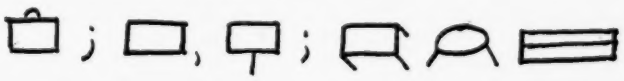
All the data (except No. 1) are recorded during actual classroom interaction. The first group of data is recorded prior to observing the interaction. The data in Nos. 2 and 3 require sequential time interval recordings. The data in Nos. 2, 3, 4, and 5 require coding shifts to identify the different behaviors. These changes include shifts in speakers, changes in verbal content, various uses of materials, activities, positions, movements, etc. Each of the data groups depends on the observer's ability to recognize a particular dimension and record it.

Thus, the recording depends on the observer's ability to identify the data item; recall a particular code component; and represent the dimension via certain coding conventions; i.e., *placing the proper symbol in the proper place.* There are ten categories of verbal behavior to choose from, plus a total of fifteen items in the nonverbal dimensions, which, when placed in the observation form, identify the item, its function, and the sequence or duration of its use. The choice of placement is between two columns.

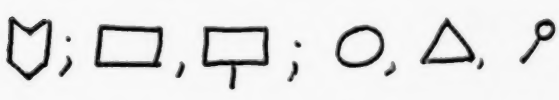
What to observe is presented as the items constituting each of the four nonverbal dimensions. The reader is already familiar with the fifteen nonverbal symbols. The following is a summary of the items in each dimension:

Items to observe in total application of the Nonverbal Interaction Analysis formula:

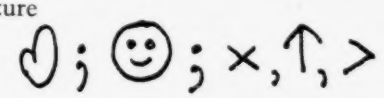
Dimension I— *desks (teacher and student); **boards (chalk, bulletin); ***tables, chairs, shelves.



Dimension II— books; audiovisual aids (chalkboard, 2 dimensional illustrations [see ** above]); special supplies (objects, equipment, manipulative tools, etc.)



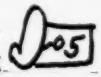
Dimension III– *gestures; **expressions; ***position, movements, posture

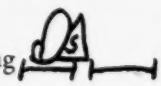


Dimension IV– combinations of symbols in Dimension II plus Dimension III or any combination of a Dimension II symbol plus a category of verbal behavior.

The following three examples illustrate three types of activities:

a. Reading example of teacher lecturing from printed material

b. Writing  example of teacher writing lecture information at chalkboard (replaces verbal)

c. Demonstrating  example of teacher demonstrating function of equipment (replaces verbal)

The details for recording the above symbols are presented in the next section.

QUESTION NO. 6: The Value of Observational Data? - Analysis and feedback.

Just as the observer and the observed individual determine the observational objectives, the *worth* of any observation depends upon these two individuals in other ways. *The validity of the descriptive data depends on the accuracy of the observer, and the credibility of the description depends upon the interpretation of the recorded data by the observed individual.*

The descriptive data collected during observation may be valuable in several contexts. Practicing data collection skills increases observer accuracy. Accuracy of data is important in classroom research. Credibility depends upon data analysis and valid feedback. Credible feedback increases behavioral awareness. Awareness of present behavior depends upon feedback. Applying research findings for purposes of behavioral modification presupposes that one is *aware of his present behavior and aware of credible behavioral alternatives.* Finally, the extent to which this application is successful depends upon further data collections, analyses, and feedback sessions. The entire research and application process can then be said to depend upon the *accuracies* and *awarenesses* of the individuals involved in studying classroom behaviors.

The level of awareness and accuracy may influence the choice of observational method. Delayed observational replay provides for reliability checks that increase data accuracy, observational skills, and the teacher's level of self-awareness. The method of immediate observation may be employed if a high level of accuracy and awareness have already been developed.

If the observational objective is an in-depth description, then the large number of included dimensions presupposes that the observer is highly skilled and that the observed individual is quite aware of his behavior. It is important that both the observer and the observed are able to agree on the credibility of the data description. The use of several observers or the method of delayed observation may be beneficial in establishing such agreement, so that the two methods may be employed in the following way in an extended skill development program: Delayed observation may be profitable in the initial training stages in order to increase the participants' abilities. This method may shorten both stages—the *acquisition of recording and analytical accuracy* and the *application of behavior skills.* Once self-trust and mutual trust are established, the method of immediate observation may then be employed to mutual satisfaction. Such a situation may be a training program in which the teachers are included in dual roles—as both observer and observed participant. In summary, the delayed observation method serves as an excellent introduction for behavioral study. If such a study is extended to include behavioral development, immediate observation may then be employed to continue the program at less expense and with fewer technical difficulties.

NVIA, as a technique for immediate observation, implies that the observers are well trained (accurate) and that the observed individuals are familiar with the observational instrument and perceptive about their own behavior (aware). This seemingly ideal situation might be realized by following the program suggested on Page 93, the use of videotape equipment to introduce the Nonverbal Interaction Analysis observational system and to establish the credibility of the instrument and develop mutual trust between the observer and the observed participants. The different roles allow each staff member to acquire accuracy in recording, in analyzing, and in applying behaviors.

The preceding description emphasized the importance of the observer's accuracy during immediate observation. The following description emphasizes the role of the observer during delayed observation. In delayed observation there is always more than one observer—the cameraman and the observers who will ultimately view the videotape replay. Since the data analysis depends upon the accuracy with which the camera has recorded the data, the cameraman is responsible for recording the data in Dimensions I and II prior to photographing the classroom interaction. He may do this in several ways. He may "zero in" on the classroom arrangements and clock to note the time and the items in Dimensions I and II, or he may record this information on the cover of the observation form if he is familiar with the system. Also, the teacher may fill in certain of these data if she is familiar with the procedures.

The second group of observers includes the individuals who will view the data collection (i.e., observe the interaction by watching the videotape replay). They will probably be concerned with much the same data as are the immediate observational observers. Therefore, the data recording procedures are similar. However, these delayed observers have the option of extending the focus by replaying the tape any number of times. Also, the observation may be more analytical, since, in discrepancies concerning data recording, the interaction can be halted and discussed. The data code components are identical with those used for immediate observation (i.e., same use of category numbers, symbols, etc.). The following section explains the data recording procedures.

NVIA RECORDING TECHNIQUES

The preceding section answered questions about observational objectives, theory, methods, use of observers, etc. The objectives clearly influence both the focus and the amount of descriptive data recorded during an observational session. The purpose of this section is to identify the exact data that comprise these descriptions by showing the sequential coding techniques for recording these data (i.e., HOW [the technique by which], WHO [the observer], records WHAT [data and symbols] WHEN [time] WHERE [use of observational form]). Broadly, the recording procedures describe the classroom by identifying *who* (teacher and/or pupils) *says* or *does what* (verbal, nonverbal behaviors), *when* (sequence), *where* (physical classroom setting).

NVIA coding techniques depend upon the observer's ability to recognize and record the data. The observer must recognize multiple classroom dimensions; translate these cues/clues into codes and enter these symbols on the observation form. Nonverbal Interaction Analysis has developed three innovations to meet these extensive requirements. They are:

1. Adding new coding components (15 symbols)
2. Dividing the observation session into two segments, thereby altering the observation form
3. Reassigning functions of the original code components (by combining the ten category numbers with the 15 symbols), further altering the observation form

This section is arranged in order of these three innovations. This arrangement develops observational skills that correspond to increased data complexity. Each step includes an explanation, a review, and new recording procedures to be learned. The following three steps insure coverage of the information required for recording:

Step No. 1 - Study NVIA coding procedures.

- A. Read explanation of Nonverbal Interaction Analysis development and its relationship to Interaction Analysis.
- B. Review Dimensions I-IV data and symbols.
- C. Learn functions of symbols.

Step No. 2 - Study the structure of the session and the NVIA observation form.

- A. Read explanation for dividing observation session into two segments; also explanation for dividing observation form.
- B. Review the pre-interaction data; also the data collected during interaction.
- C. Learn rules for using dual columns to record interaction data.

Step No. 3 - Study combined coding components and the NVIA recording procedures.

A. Read explanation for combining code components.

B. Review the four types of codes—their functions and placement.

C. Learn sequential recording of code components.

The three steps just presented are an overview for this section of Chapter IV. Following is the specific material necessary for proceeding with each step.

Step No. 1 - Study NVIA coding procedures.

A. READ THE FOLLOWING EXPLANATION OF NONVERBAL INTERACTION ANALYSIS DEVELOPMENT AND ITS RELATIONSHIP TO INTERACTION ANALYSIS.

The amount of data collected is dependent on the observational objectives. A total description includes the four dimensions developed for NVIA, plus the verbal dimension as developed for Interaction Analysis (i.e., verbal plus nonverbal interaction among the teacher, students, and such relevant aspects of the learning situation as materials, surroundings, etc.; also certain identifiable activities, produced by these interactions).

Since NVIA is based on the framework used in Interaction Analysis, the two techniques have much in common. Interaction Analysis describes the classroom by identifying who verbalizes what, when; *verbalizations are identified according to speaker, content, and sequence.* Since interaction implies two or more "interactors," provisions for discriminating between members is desirable. Interaction Analysis identifies the "verbalizer" by providing categories for the teacher's behavior separate from those used for student verbal behavior. This is done by assigning seven category numbers for teacher talk (Categories No. 1-7); two category numbers for student talk (Categories No. 8-9); and a category number for nontalk silence or confusion (Category No. 10). A second function of the category number is to identify the content of the verbalization. A third function of the category numbers is to identify verbal behavioral sequences. (See Appendix, Page 181 for explanation of Interaction Analysis categories and coding procedures.) A change in a category number identifies a shift in speakers or a change in content; the repetition of a category number identifies an extension of the same verbal category for more than three seconds. Thus, the recording procedure entails entering a category number into a vertical column of spaces for each change in verbal behavior or for each three-second interval of the same verbal behavior.

Interaction Analysis is composed of 10 code components; Expanded Interaction Analysis is composed of 30 code components. Nonverbal Interaction Analysis retains the aforementioned three functions of the category numbers in recording the verbal behaviors (speaker, content, sequence of verbal interaction). However, since four nonverbal dimensions were added, provisions had to be made to accommodate, record, and analyze these additional data. Nonverbal Interaction Analysis needed more coding elements and/or additional coding possibilities. There were several alternatives. The original Interaction Analysis coding techniques could be discarded, more numbers could be added to the original ten categories, or new types

of coding components, such as symbols or figures, could be developed. It was decided to do several things. First, retain the ten original Interaction Analysis categories, plus developing additional nonverbal symbols. Second, redefine the functions of the 10 categories by combining Interaction Analysis category numbers with the nonverbal symbols. Third, restructure the observation itself, and modify the observation form.

Thus, the inclusion of only 15 symbols, along with modified coding procedures, could allow for recording the verbal interaction, plus all the additional nonverbal data. In the development stages of NVIA it was found that the 15 symbols could both replace and accompany verbal behaviors; i.e., *the nonverbal dimensions could occur alone or in conjunction with the verbal dimension.* Since the complexity of coding partially depends on the observational objectives, it was found that any of the four dimensions could be recorded independently of the 10 Interaction Analysis category numbers. Examples of combining Interaction Analysis category numbers with the NVIA symbols follow.

B. REVIEW DIMENSIONS I-IV DATA AND SYMBOLS.

Chapter II presented the data and the symbols for each of the four dimensions. Review each dimension if you have not learned the symbols. Substep C below explains the functions of the symbols in recording the data represented in each dimension. If you have already learned the symbols and what each represents, you may wish to skip the Chapter II review and concentrate on their functions. A brief summary of the function of the symbols is included in C below. See Figure A (next page) for examples of recording.

C. LEARN FUNCTIONS OF SYMBOLS.

Each NVIA dimension describes an aspect of the classroom. Inclusion of each additional dimension yields increasingly complex descriptions by identifying relationships between, among dimensions. Each dimension is mutually somewhat exclusive. Also, the data within each dimension may be recorded in varying degrees of complexity. Ultimately the observational objectives determine the complexity of recording and depending on these objectives, certain data are optional. Such optional data are indicated by asterisks (*).

A description of the physical classroom setting includes:

1. The arrangement of the classroom furnishings—the six Dimension I symbols recorded on the cover of the observation form prior to interaction

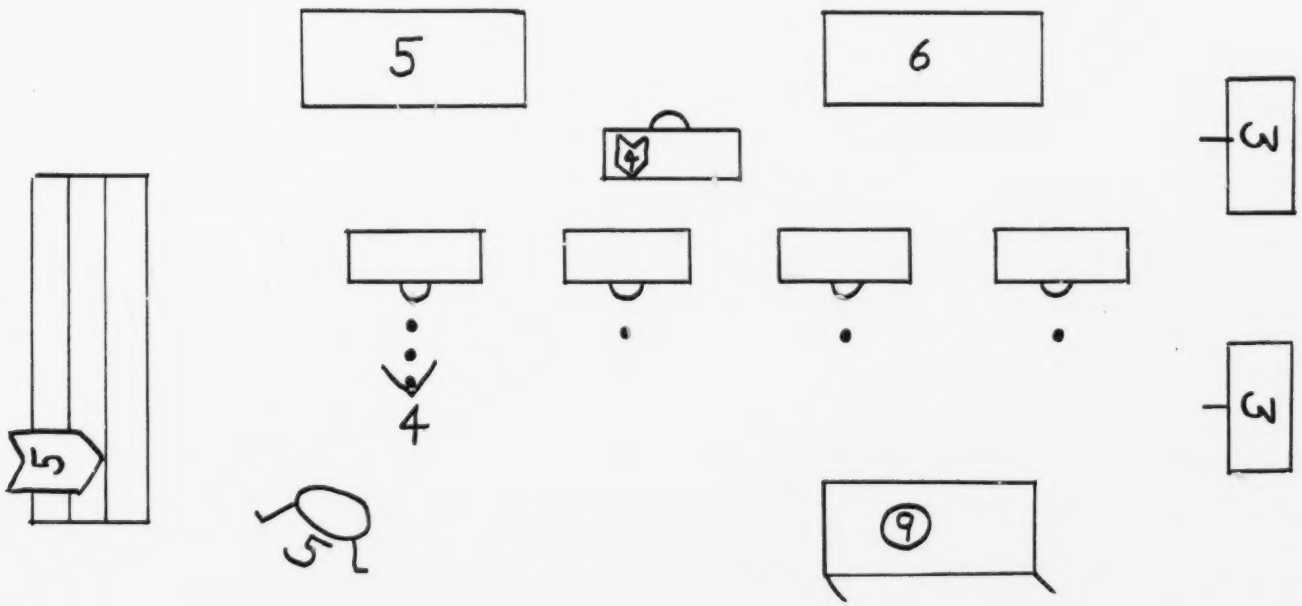
   FUNCTION

   a. To identify the location of each furniture item by positioning each symbol individually on the cover.

   (*) b. To identify the printed content or use of the furniture items by enclosing a category number within each symbol

FIGURE A

*(Cover of Observation Form - Dimension I, Dimension II data)



Lesson taught:

Grade level:

No. pupils:

Time: Begin_____ End_____ Tallying interval_____ seconds

Type of Observation: (Verbal and/or Nonverbal; Isolated; Number of Observers, etc.)_____

_____

Objectives of Observation: (Dimensions being recorded_____)

Key:

* Teacher's desk contains written test; student desks arranged 4 in a row, 4 rows = 16 students

** Chalkboards contain information (Category 5); directions (Category 6); bulletin boards contain teacher-acknowledged student contributions (Category 3)

*** Table contains student-created products (Category 9); chairs arranged for cognitive activities (Category 5); shelves contain informative printed materials (Category 5)

2. The learning materials–the four Dimension II symbols recorded on the cover of the observation form prior to interaction

FUNCTION

a. To identify the location of each material item by positioning each symbol individually on the cover
b. To identify a spatial relationship between a material and a furniture item by recording a Dimension II symbol together with a Dimension I symbol
(*) c. To identify the printed content, type of material item by enclosing a category number within each symbol
(*) d. To identify a conceptual relationship between a type of material and a furniture arrangement by recording a Dimension II symbol together with a Dimension I symbol together with a category number

A description of the classroom during interaction includes:

1. The learning materials–the six Dimension II symbols recorded in either column of the observation form during interaction (see Figure B)

FUNCTION

a. To identify a material item used as the source of content; to replace a verbal presentation. This is done by recording a Dimension II symbol in the left column.
b. To identify a material item used as a supplement in conjunction with a verbal presentation by recording a Dimension II symbol in the right column beside the verbal category number.
(*) c. To identify the printed content, type, use of material by enclosing a category number within a symbol.
(*) d. To identify the relationship between the type and the use of the material as it affects the verbal presentation; the purpose for which a material is used to supplement a presentation by recording a Dimension II symbol enclosing a category number in the column space beside the verbal category number.

2. The nonverbal behaviors–the five Dimension III symbols recorded in either column of the observation form during interaction

FUNCTION

a. To identify a nonverbal behavior used as the source of communication; its replacing a verbal behavior by recording a Dimension III symbol in the left column.

FIGURE B

(*Inside of NVIA observation form)

DATA RECORDING FORM

V.	Nv.	V.	Nv.	V.	Nv.
1.____	____	26.____	____	51.____	____
2.____	____	27.____	____	52.____	____
3.____	____	28.____	____	53.____	____
4.____	____	29.____	____	54.____	____
5.____	____	30.____	____	55.____	____
6.____	____	31.____	____	56.____	____
7.____	____	32.____	____	57.____	____
8.____	____	33.____	____	58.____	____
9.____	____	34.____	____	59.____	____
10.____	____	35.____	____	60.____	____
11.____	____	36.____	____	61.____	____
12.____	____	37.____	____	62.____	____
13.____	____	38.____	____	63.____	____
14.____	____	39.____	____	64.____	____
15.____	____	40.____	____	65.____	____
16.____	____	41.____	____	66.____	____
17.____	____	42.____	____	67.____	____
18.____	____	43.____	____	68.____	____
19.____	____	44.____	____	69.____	____
20.____	____	45.____	____	70.____	____
21.____	____	46.____	____	71.____	____
22.____	____	47.____	____	72.____	____
23.____	____	48.____	____	73.____	____
24.____	____	49.____	____	74.____	____
25.____	____	50.____	____	75.____	____

*Data recorded during interaction; Dimensions II, III, and IV data

b. To identify a nonverbal behavior used to supplement verbal communication; as accompanying a verbal behavior by recording a Dimension III symbol in the right column space beside the verbal category number

(*) c. To identify the type, use, purpose of the nonverbal behavior by enclosing a category number within a symbol

(*) d. To identify the relationships between verbal and nonverbal communication by recording a Dimension III symbol enclosing a category number in the right column space beside a verbal category number

3. The activities—various combinations of Dimension II symbols, Dimension III symbols, and category numbers recorded in either or both the columns on the observation form during interaction (see examples next page)

FUNCTION

a. To identify the verbal use of any material item by recording either:

(1) A verbal category number in the left column; a Dimension II symbol in the right column, indicating the use of a material to supplement a verbal presentation; referring to any of the six material items (Pages 101-102)

(2) A verbal category number in the left column; a Dimension II symbol enclosing a category number in the right column, indicating the use of a material's contents as the source of or as support for a verbal presentation; quoting, citing the printed contents of a material

b. To identify written use of a material item by recording

(1) The combination of Dimension II and Dimension III symbols depicting a writing activity in the same space; together with a Dimension II symbol signifying the source of the writing

(2) A category number within the symbol to identify the contents of the writing; or type of material.

c. To identify demonstration of material items by recording

(1) A combination of Dimension II and Dimension III symbols together in the same space

(*) (2) The above combination enclosing a category number to identify the relationship between the type and use of the material; or the purpose of the demonstration

Examples of Recorded Observation Form

1.	____	identifies an audiovisual material used instead of a verbal presentation
2.	____	Dimension II symbol enclosing category number identifies informative audiovisual material used to replace verbal lecture
3. 5		identifies an audiovisual material used to supplement a lecture presentation
4. 5		Dimension II symbol enclosing category number recorded in the column beside the verbal behavior category indicates that the content of the verbal presentation is similar to the content of the audiovisual aid; lecture may be based on an informative material
5. 4		indicates that the teacher is asking a question about an informational printed material; may be a question about textbook content
6.	____	identifies the use of a smile to replace verbal praise.
7. 2		identifies a smile accompanying a verbal praise statement.
8.	____	identifies a blank facial expression used as a means of criticizing or ignoring a student; the expression is used instead of verbal criticism
9.	____	identifies use of movement to give directions; may be a physical skill to be perfected, proper position
10. 2		indicates inconsistent verbal-nonverbal behaviors; identifies a verbal praise statement accompanied by a critical facial expression
11. 9		simultaneous student-teacher behaviors; student-initiated talk, nonverbally being accepted by teacher's attentive eye contact, receptive communication
12. 6		teacher gives directions about machinery, use of equipment.
13. 4		teacher asks questions about tool
14. 9		divergent student idea concerns use of a supply, manipulation of a tool

d. Identify simultaneous verbal-nonverbal activities by recording

(1) Category number in the left column signifying verbal behavior; combination of Dimension II, III symbols in the right column signifying nonverbal behaviors

(*)(2) A category number within the symbols in the right column to more precisely identify the type of activity

e. Identify simultaneous nonverbal activities by recording

(1) Dimension II symbol in left column, signifying use of material to replace verbal presentation; combination of Dimension II, III symbols in right column signifying nonverbal actions

(2) Combination of Dimension II, III symbols in left column, signifying teacher nonverbal activities; combination of Dimension II, III symbols in right column, signifying student nonverbal activities

(*) (3) Enclosing a category number in any of the above identifies the type, use, purpose of the activity.

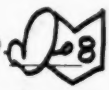
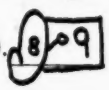
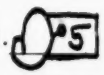
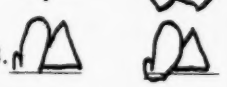
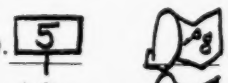
f. Identify individual or independent (nongroup focused or teacher controlled) activities; also groups of students working independently by recording

(1) Category 10s in left column, signifying individual silent seat work activity; combination of Dimension II, III code components to identify task

(2) Category 10c in left column signifying mass communication or groups of students working independently of teacher control; combinations of Dimension II, III code components to identify group task

(*) (3) Enclose category number in right column to more precisely identify type of activity.

Examples of Recorded Observation Form (Cont'd)

15. 5		teacher quotes printed material.
16. 8		student responds by citing directions found at chalkboard.
17. 9		student uses information contained in informative source as basis for divergent idea.
18.		identifies "unpredictable" writing activity. Sources may include creative assignments, studetns' personal notebooks, art project, etc.
19.		identifies a student writing predictable content, such as test answers or responses to directions.
20.		identifies "directed" writing at chalkboard for creative problem-solving.
21.		identifies teacher writing information, facts at chalkboard.
22.		identifies the handling of an object for a demonstration activity; may be any nonmechanical item, shown for any number of reasons. (Not identified by category number)
23.		identifies the teacher's nonverbal acceptance (handling) of a student-created product.
24. 5		identifies teacher lecture accompanied by simultaneous s student writing.
25. 5		identifies students taking notes on teacher lecture.
26. 5		identifies teacher writing information while lecturing.
27.		audiovisual aid replaces verbal presentation accompanied by simultaneous student writing activity.
28.		identifies simultaneous teacher and student demonstration of equipment.
29.		identifies teacher demonstration directions accompanied by student nonverbal manipulation response.
30.		identifies notetaking about informative audiovisual presentation
31. 10s		identifies *individualized* student seat work—writing task.
32. 10c		identifies *group* of student manipulating equipment.
33. 10s		identifies *individual* student writing answers or directed assignment.
34. 10c		identifies *group* experimenting, discovering use of equipment.

Step No. 2 - Study structure of the session and NVIA observation form.

A. READ EXPLANATION FOR DIVIDING OBSERVATION SESSION INTO TWO SEGMENTS; ALSO EXPLANATION FOR DIVIDING OBSERVATION FORM.

NVIA divides the observation session into two separate segments of data collection. The first segment includes data recorded prior to observing the live classroom interaction. In this segment the physical setting of the classroom is described (Dimension I and II data). The second segment includes data recorded during the live classroom interaction. In this segment the on-going classroom interaction is described (Dimensions II, III, IV data). The purpose of this division is to extend the use of the coding components by assigning them two separate functions. This separation necessitates a modified observation form.

NVIA divides the observation form into two separate parts. First, preinteraction data are recorded on the cover of the observation form. Second, the data collected during interaction are recorded on the inside of the observation form in two vertical columns. Interaction Analysis tallying technique was modified to include a second vertical column. Again, the purpose of this modification is to increase the functions of the coding components. Thus, the same code components fulfill separate functions depending on placement in one of the two columns.

B. REVIEW THE SYMBOLS USED TO RECORD PRE-INTERACTION DATA AND THE SYMBOLS USED TO COLLECT THE DATA DURING INTERACTION.

Chapter II presented the dimensions used to collect data before and during interaction. Step No. 1 briefly summarized the symbols used in each segment of data collection. Unless you are thoroughly familiar with these symbols, you will find the following review profitable.

The NVIA data collection procedures begin with the recording of the pre-interaction data on the observation form cover.

Pre-Interaction Data

These data (see Observation Form cover—Figure A) refer to the items that describe the physical classroom setting. The code components basically include Dimension I and II symbols. Dimension I and II are considered to be relatively stable or unchanging items. However, materials (Dimension II) also constitute transitional items (items that affect the interaction). Therefore, Dimension II data are recorded during both segments of the observation.

Recording Pre-Interaction Data

Pre-interaction data may be recorded before the class members enter the room, or while the class is in progress during the first few minutes that the observer is present.

The first data to be recorded are the Dimension I symbols, which are entered on the cover of the observation form. The location of these furniture items is identified by the position of the symbols on the cover. The observer may wish to draw these symbols large so as to provide space for adding the next dimension (Dimension II). Six symbols identify the six furniture items that constitute Dimension I data.

After completing this information, the observer may wish to identify the contents of the Dimension I items. Certain of these data are optional, and the observer has a choice of either recording a category number used to signify the printed content of a furniture item, or he may record a second symbol (Dimension II). For example, the written content at the chalkboard may be identified according to a category number as Information (Category No. 5), or a table may contain mechanical equipment (Dimension II △). The observer, therefore, may decide to record either or both the Dimension II symbol and/or category number.

The second group of data recorded deals with Dimension II—symbols. Of the six symbols, four are used as pre-interaction data. The remaining two are identical with those in Dimension I. These four symbols identify the four items that constitute the visible materials and supplies. The location of these items is identified by the position of the symbols on the cover of the observation form. Usually these items are found along with the items in Dimension I (i.e., the books are located on shelves, special supplies and equipment are found on tables, etc.). Therefore, the size of the Dimension II symbols will probably be smaller than the Dimension I symbols, since materials may constitute the contents of Dimension I (see observation cover, Figure A, Page 107). This is the first and simplest combination of NVIA code components. Besides the Dimension I and II symbols, there is additional information about the particulars of the observation session (see bottom of observational form cover).

"Time" refers to both the duration of the observation session and the time interval decided upon for tallying. The suggested length of an observation is 20 minutes. Interaction Analysis specifies recording a tally for each three-second interval of verbal behavior. The observer may modify the suggested length of the observation. Also, in situations demanding extensive data recording, the three-second time interval may be modified. It is suggested that a multiple of three seconds be selected especially in cases requiring comparisons among verbal and nonverbal data. A six-, nine-second time interval allows for transferring the tallies and interpreting the data via Interaction Analysis procedures.

Certain information may not be immediately apparent such as the lesson taught or the objectives. "Objectives" refers to either the objectives of the observer (i.e., the focus or purpose of the observation. Example: "I'm here to observe the history teacher.") or the objectives of the observed (i.e., the teacher's purpose for scheduling the observation. Example: "I want to use two motivational materials, three factual materials and learn the student reactions to each of them.") In the latter instance the objectives are not identified after the observation to avoid influencing the observer's recording. Such information may be collected at the end of the session.

In summary, the pre-interaction data consist of 10 symbols (six Dimension I symbols and four Dimension II symbols), certain information, and the optional use of 10 Interaction An-

alysis category numbers, all of which are recorded on the cover of the observation form prior to observing the classroom interaction. Summary of step-by-step pre-interaction data collection:

1. Record Dimension I symbols.
2. Record Dimension II symbols.
3. (Optional) identify contents of above by combining Dimension I and II symbols with category numbers (may also use expanded category numbers plus letters).
4. Fill in information about the observation session.

The six Dimension I symbols are usually recorded at only one point in a session. Four of the Dimension II symbols are likewise recorded at this point. However, there is the following exception: If the furniture contents of the classroom are rearranged to accommodate a new activity, a new observation form is begun and the Dimension I data are rerecorded.

Since the Dimension II items are likely to change with such furniture rearrangements, a new description of the materials may also be necessary. However, it is more likely that the use of new materials will be recorded during the interaction as they will undoubtedly affect the interaction. The next point at which the nonverbal symbols are recorded is during observation of the classroom interaction.

C. LEARN RULES FOR USING DUAL COLUMNS TO RECORD INTERACTION DATA

The second modification of the observation form affects the procedures for recording the interaction data. These data describe the interaction in the classroom and are composed of the 11 items in Dimension II and III, plus the 10 categories of verbal behavior. The purpose of adding the second tally column is to increase the amount of data that can be recorded.

The division between the left and right columns provides distinctly different functions for the code components. The original consideration was to delineate between the verbal and the nonverbal behaviors. Therefore, opening the observation form, the observer will find six columns composed of 25 spaces each. Above the first, third, and fifth columns appears the label "Verbal"; above the second, fourth, and sixth columns appears the label "Nonverbal." (See NVIA tally sheet, Figure B, Page 109.) Thus the primary purpose is to accommodate both types of behavioral data. However, upon experimentation, it was found that the second column could be used to more advantage than simply to separate the verbal from the nonverbal data. Thus, situations such as the following could be accommodated with slight modifications of the two columns:

> The two columns could be used to identify simultaneous teacher and student behaviors; to identify the more significant versus the less signifi-

cant dimensions; to identify congruent versus incongruent behaviors or teacher versus student behaviors; or materials used to supplement versus replace a verbal presentation.

Further combinations of code components increased the alternatives. The possibilities seemed endless and exciting. However, with the attempt to develop rules governing the use of the two columns, certain functions had to be limited so that the recording procedures would not become too complicated. Thus, the following restrictions govern the entry of data into the two columns.

Left column: Record major verbal, nonverbal sources of communication.

1. Record standard Interaction Analysis verbal interaction data (10 category numbers).
2. In the absence of verbalization, as when a material (Dimension II), or nonverbal behavior (Dimension III) or activity (Dimension IV) replaces the verbal presentation or verbal behavior, record the appropriate NVIA symbol (combination of symbols).

Data in the left column may be defined as the *primary source of content* or as the *major focus of an activity* (i.e., the behaviors—verbal; nonverbal; materials or activities upon which class attention is focused). Since the most common classroom focus is the teacher's verbal behavior, the majority of code components entered into the left column will probably be a category number identifying the teacher's verbal behavior. The following examples identify nonverbal dimensions occurring instead of the verbal:

In the case of a teacher's verbal presentation being replaced by a material such as a filmstrip, this item then becomes the major focus of attention, and the appropriate Dimension II symbol is entered into the left column instead of the verbal category number. Likewise, in the event that the teacher uses a nonverbal behavior, such as a smile, instead of a verbal praise statement, then this facial expression becomes the source of communication and the appropriate Dimension III symbol is recorded. The above examples are recorded:

When recording a nonverbal activity, such as the handling of equipment to replace a verbal presentation, a combination of Dimension II, Dimension III symbols is required. The following identifies such an activity as the major focus of attention.

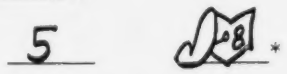
Right column: Record NVIA data that occurs in conjunction with verbal interaction.

1. Record Dimension II symbols to identify materials used to supplement a verbal presentation. Such symbols may constitute the minor focus of an activity; i.e., when the major source of content is the teacher's lecture presentation, Category No. 5 is recorded in the left column. If an audiovisual aid provides a supplement to this lecture, record the appropriate Dimension II symbol in the right column tally space beside the verbal behavior. So that both the major and minor sources of content (focuses of attention) are recorded in the following manner:

2. Record Dimension III symbols to identify simultaneous verbal and nonverbal behaviors. For example, if the verbal behavior is accompanied by a nonverbal behavior, record the verbal category of behavior in the left column; the simultaneous nonverbal behavior in the tally space beside it in the right column. Comparisons readily identify congruent and/or incongruent behaviors—if the teacher says "good" (Interaction Analysis Category No. 2—Praise) and frowns at the same time (NVIA facial expression Dimension III) the verbal praise statement appears to be inconsistent with the nonverbally communicated criticism. Such simultaneous verbal and nonverbal behaviors are recorded in the following manner:

3. Record Dimension IV combination of symbols to identify:

   (a) Simultaneous verbal/nonverbal activities or simultaneous teacher/pupil activities; i.e., if the teacher's lecture is accompanied by a simultaneous student activity, such as taking notes, the verbal/nonverbal, teacher/pupil behaviors are recorded in the following manner:



   (b) Simultaneous nonverbal activities; i.e., an informative audiovisual item replacing the teacher's lecture, is accompanied by

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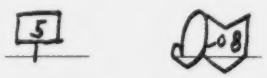
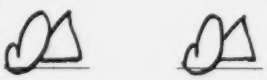
*The Dimension IV code combination in the right column identifies a student writing activity. Each of the Dimension IV activities is a combination of a Dimension II, Dimension III symbol—a nonverbal behavior plus a material item. Detailed explanations of such code combinations are found in Step No. 3.

a simultaneous student activity, such as note taking. The simultaneous nonverbal activities are recorded in the following manner:

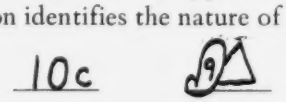


Also simultaneous teacher-pupil nonverbal activities, such as teacher demonstration of equipment accompanied by student demonstration.



(c) Individual or independent (nongroup focused or nonteacher controlled) activities. Such student-centered activities focus on either the individual student engaged in independent, silent seat work or several students engaged in small group endeavors. In such situations neither the teacher nor a particular material provides the major focus. To separate the two types of activities, the following distinctions are made for Category 10: Category 10s identifies students engaged in individual silent seat work activities. 10S recorded in the left column identifies this type of activity; the Dimension IV combination recorded in the right column identifies the nature of the activity. The following indicates a class engaged in some type of individual silent writing activity:

10C recorded in the left column, accompanied by a Dimension IV coding combination in the right column, indicates that the class is engaged in some group activity. In instances of small group activities, there is less likely to be silence. Remember, NVIA redefines 10C as other than "negative" confusion. The definition has been extended to include cooperation, communication, and other inferences of small group interaction. Such student communication or small group activities are identified in the following manner: Again the 10C in the left column identifies this type of activity; the Dimension IV combination identifies the nature of the activity.



The above Dimension IV combination of Dimension II, Dimension III symbols identifies the activity as manipulation of equipment. Furthermore, inclusion of the Interaction Analy-

sis Category No. 9 indicates independent or creative work efforts that are not restricted by direct teacher control.

Step No. 3 - Study combinations of code components and the NVIA recording procedures.

A. READ EXPLANATION FOR COMBINING CODE COMPONENTS.

Recording utilizes combinations of individual code components. The two basic coding elements are Interaction Analysis category numbers and the Nonverbal Interaction Analysis symbols. Combinations of these two elements increase the amount of data each element is capable of representing. Steps 1 and 2 gave examples of recorded code combinations. This last step completes NVIA recording procedures.

It is necessary that the observer be thoroughly familiar with the combinations as well as the individual code components before attempting to record the NVIA dimensions in their entirety. Individual coding components consist of 10 Interaction Analysis category numbers and 15 NVIA symbols; combinations of these elements are far more numerous.

Step No. 2 familiarized you with the use of the two columns on the tally sheet. The use of two columns expands the functions of each code.

The beginning of Step 3 introduces combinations of coding components in isolation; the latter part of Step 3 explains the sequential recording of combinations. You have seen that each dimension contains both single as well as combined code components. That is, a *symbol alone identifies the presence of an item; a symbol combining (enclosing) a category number identifies the content of an item.* Remember, the complexity of coding depends upon the objectives of the observation. The more complete the observational description, the more sophisticated are the skills required of the observers, and the more complex are the coding components.

In order to make the NVIA system flexible enough to meet different demands, variations in coding techniques are possible. Symbols alone may constitute the entire coding components for the isolated observer who is restricted to purely visual data. Also simple foci restricting the descriptive data to a single dimension limit the number of symbols to be recorded. For example, a description of the room arrangement and the presence of materials only requires that the observer be responsible only for a total of 10 NVIA symbols (Dimension I, II). A description of the materials used during interaction requires that the observer be responsible for recording only six symbols. A description of nonverbal behaviors occurring during interaction requires that the observer be responsible for recording a total of four symbols. A category number enclosed within the aforementioned symbols is optional.

Nevertheless, even in observations employing such combinations, the skills required of the observers are relatively uncomplicated. The reason is that those data are objective and de-

scribe only the presence of an item. Therefore, the observer is not required to "speculate" about the use, impact, or effect of the item on the interaction. Such speculations are often necessary for the observer of human behavioral interaction if he is to categorize the content of each verbal and nonverbal behavior. Therefore, the single observer who is responsible for collecting both verbal and nonverbal data utilizes both the basic coding elements. Regardless of how simple or how complex the description, the use of the two code components and the NVIA recording techniques is required. Any verbal plus nonverbal observation depends on the use of the category numbers; the symbols and the proper placement of these two elements in the two recording columns.

NVIA retained the use of the original 10 category numbers and added 15 symbols. By modifying the original use of the category numbers, as in combining them with symbols, new functions developed. is an example of combining a verbal and a nonverbal code component by using a category number to identify a type of material. Such a combination identifies the content as informative or factual. Therefore, the material is classified as a textbook, resource item, etc. Such combinations modify the original function of the category numbers. Nevertheless, the original use of the category number remains. It is still used to identify a verbal statement and is the simplest of the four types of NVIA codes. Each of the four types includes a basic code element. The functions of the basic code elements are different for each type; i.e., the category number and symbol are used in four different capacities. The four code types include all the coding combinations required in any data collection; i.e., the 10 verbal plus 15 nonverbal codes, when used in four capacities, are capable of recording as complex a data description as is desired.

Each of the following four code types are presented according to their definition; the codes that are included in that definition; the functions of each code; and the placement of the code(s) on the observation form. Step 1 may be reviewed if the function of the NVIA symbols has not yet been learned.

B. REVIEW THE FOUR TYPES OF CODES–THEIR FUNCTION AND PLACEMENT.

Type 1 - Simple codes

Definition: *A simple code is defined as either of the basic code elements recorded alone.* A category number alone is recorded only during interaction; a symbol recorded alone may be recorded before or during interaction.

Codes included:

1. The Interaction Analysis Category Numbers (7 categories of teacher talk + 2 categories of student talk + 1 other = 10 category numbers).

FUNCTION: Describe verbal behavior.

PLACEMENT: Record *during interaction in left column.*

2. The NVIA symbols

(a) Dimension I, II (6 + 4 = 10 symbols)

FUNCTION: Describe physical classroom setting by the location of furnishings and materials.

PLACEMENT: Record prior to interaction in appropriate positions on the observation form cover.

(b) Dimension II, III (6 + 5 = 11 symbols)

FUNCTION: Describe materials used to replace verbal presentation and nonverbal behaviors used to replace verbal behaviors.

PLACEMENT: Record during interaction in left column.

Type 2 - Compound codes

Definition: *A compound code is composed of two basic code elements—either a symbol enclosing a category number or a symbol enclosing another symbol.* These combinations are recorded in a single position on the observation form cover or in a single space in the left column of the observation form.

Codes included:

1. The NVIA symbols enclosing a category number.

(a) Dimension I, II symbols enclosing a category number (total of 10 symbols enclosing any of 10 possible category numbers)

FUNCTION: Describe content, type, use of furniture items or materials.

PLACEMENT: Record NVIA prior to interaction in appropriate positions on the observation form cover.

(b) Dimension II and III symbols enclosing a category number (total of 11 symbols enclosing any of 10 possible category numbers).

FUNCTION: Describe contents, type of materials used as replacement for verbal presentation; type, use of nonverbal behaviors to replace verbal communication.

PLACEMENT: Record during interaction in left column.

2. NVIA symbol enclosing another symbol.

(a) Dimension I symbol enclosing Dimension II symbol.

FUNCTION: Describe location relationship between materials and furniture items.

PLACEMENT: Record Dimension I symbol enclosing Dimension II symbol in the appropriate position on observation form cover.

(b) Dimension IV = Dimension II and III symbols

FUNCTION: Describe a nonverbal activity replacing a verbal presentation by identifying the relationships between a nonverbal behavior and the use of a material.

PLACEMENT: Record Dimension III symbol superimposed on a Dimension II symbol in the left column.

Type 3 - Complex codes

Definition: *A complex code is composed of both basic code elements, (i.e., a category number and a symbol).* This combination is recorded only during interaction. This identifies the verbal plus a nonverbal dimension occurring simultaneously. Thus, it is recorded simultaneously, using both the columns on the observation form.

Codes included:

1. Interaction Analysis Category Numbers and NVIA symbols

(a) A category number and a Dimension II symbol

FUNCTION: Describe a verbal presentation in which a material is used as a supplement.

PLACEMENT: Record the category number in the left column and the material symbol alongside in the right column.

(b) A category number and a Dimension III symbol

FUNCTION: Describe simultaneous verbal and nonverbal behaviors.

PLACEMENT: Record the category number in the left column and the nonverbal behavior symbol alongside in the right column.

Type 4 - Compound-Complex Codes

Definition: *A compound-complex code is a combination of the preceding code types.* It is used only during interaction and requires both columns.

Codes included:

1. An Interaction Analysis Category number and an NVIA symbol

(a) A Category number and a Dimension II symbol enclosing a category number

FUNCTION: Describe relationships between verbal presentation and the content of the material (i.e., use of content such as citing, quoting, etc.)

PLACEMENT: Record category number in left column and Dimension II symbol enclosing category number alongside in right column.

(b) A category number and a Dimension IV combination of symbols

FUNCTION: Describe simultaneous teacher-student; verbal-nonverbal activities.

PLACEMENT: Record category number in left column and Dimension IV combination of symbols alongside in right column.

FUNCTION: Describe individual, independent student activities occurring in absence of teacher presentation.

PLACEMENT: Record category number 10* (optional use may include Expanded Category No. 10s, 10c) in left column and combination of Dimension IV symbols in right column to identify type of nonvebal student activity (enclose category number within symbols to identify content, type, use of materials.*)

2. Combination of NVIA symbols recorded in dual columns

(a) A Dimension II symbol and a Dimension IV combination of symbols

FUNCTION: Describe material replacing verbal presentation accompanied by simultaneous nonverbal student activity.

PLACEMENT: Record Dimension II symbol in left column and Dimension IV combination of symbols alongside in right column.*

(b) Dimension IV combination of symbols (left column) and Dimension IV combination of symbols (right column)

FUNCTION: Describe simultaneous teacher and student use of materials as in writing, demonstrating activities.

PLACEMENT: Record Dimension IV combination of symbols in left column to identify teacher activity; and Dimension IV combination of symbols alongside in right column to identify student activity.*

The preceding coding components may appear complicated. However, since the complexity of coding depends upon the observational demands, it is possible merely to record the presence of each Dimension I, II, III item via a simple code (symbol). Also, the presence of each verbal behavior is recorded via a simple code (number).

The next step entails identifying the content of each Dimension I, II and III item via a compound code (symbol enclosing a category number). Dimension IV activities likewise require compound codes to identify the nonverbal use of a material.

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*Enclosing category number is optional.

Finally, compound-complex codes identify multidimensions–the verbal and nonverbal; simultaneous teacher-pupil activities, etc.

Suggestion: To simplify recording procedures, remember that the majority of recording will consist of simple code components. The use of compound codes is frequently optional, since it is often unnecessary to record the content or the use of an item in every instance (again, this depends on the objectives of the observation). The recording of compound-complex codes invariably occurs at the beginning of an activity. Unless there are many changes in activities, such recordings of compound-complex codes should be infrequent.

The following review of the definitions of the four code components, their functions and recording is an incomplete summary of the preceding information. It is meant to be used as a type of quiz to help you learn the various NVIA coding combinations. This review will prepare you for the final part of the three steps–sequential recording. Fill in the incomplete information by *writing in the missing words and drawing in the missing codes.* The first several underlined answers are offered as samples. Completed answers follow the quiz.

SUMMARY REVIEW QUIZ OF THE FOUR TYPES OF CODES

Type 1:

A (1) simple code is either a (2) category number or a (3) symbol.

a. A (4) category number identifies both:

1) The speaker: Category numbers 1-7 identify the (5) _____ as speaker.
Category numbers 8-9 identify the (6) _____ as speaker.

2) The content of the verbal statement. Example: Category No. 2 identifies a (7) _____ statement; Category No. 8 identifies a (8) _____ statement.

b. A (9) _____ identifies

1) A furniture item in the classroom: (No. of) (10) _____ symbols in Dimension (11) _____.
Example: (12) _____ desk

2) A material item: (No. of) (13) _____ symbols in Dimension (14) _____.
Example: (15) _____ a printed material such as a textbook.

3) A nonverbal behavior: (No. of) (16) _____ symbols in Dimension (17) _____.
Example: (18) _____ eye contact

Type 2:

A (19) _____ code is either a combination of a (20) _____ enclosing a (21) _____; or a Dimension (22) _____ symbol enclosing a Dimension II symbol; or a combination of Dimension II and III symbols identifying an (23) _____ (Dimension IV).

a. A symbol enclosing a category number may identify the contents, type of

1) Dimension I (24) _____ Example: (25) _____ bulletin board contains student-created projects.

2) Dimension II (26) _____ Example: (27) _____ factual audiovisual aid.

3) Dimension III (28) _____ Example: (29) _____ eye contact communicates acceptance of ideas.

b. A Dimension I symbol enclosing a Dimension II symbol identifies:

1) Location of material in relationship to a furniture item

Example: _(30)_____ table containing equipment

_(31)_____ shelves containing manipulative tools, supplies

c. A Dimension III symbol superimposed on a Dimension II symbol identifies:

1) Dimension _(32)_____ activity. Example: _(33)_____ writing activity

Type 3:

A _(34)_____ code is recorded only during interaction. It consists of a verbal behavior, plus a Dimension II material item; or a verbal behavior plus a Dimension III nonverbal behavior. Recording requires using _(35)_____ columns. The verbal behavior is always recorded in the _(36)_____ column; the nonverbal dimension is recorded in the _(37)_____ column.

a. A category number recorded beside a Dimension II symbol identifies:

1) A material used to supplement the verbal presentation.

Example: _(38)_____ _(39)_____ Lecture supplemented by audiovisual material.

b. A category number recorded beside a Dimension III symbol identifies:

1) Simultaneous _(40)_____ and _(41)_____ behaviors.

Example: _(42)_____ _(43)_____ verbal praise accompanied by nonverbal smile

Type 4:

A compound-complex code is recorded during interaction, using both columns. It may identify simultaneous _(44)_____ and nonverbal activities; simultaneous nonverbal activities; or individual student activites. A Dimension IV activity is composed of a Dimension _(45)_____ plus a Dimension _____ symbol.

a. A category number recorded alongside a Dimension IV activity may identify:

1) Simultaneous teacher and pupil activities

Example: _(46)_____ _(47)_____ teacher lecture occurring simultaneously with students taking notes.

2) A student activity occurring in the absence of teacher verbal presentation.

Example: _(48)_____ _(49)_____ silence in which students are writing creative works.

b. Simultaneous teacher-student nonverbal activities require Dimension IV combinations of symbols recorded in both left and right columns.

Example: _____(50)_____ simultaneous teacher-student demonstrations using equipment.

The following questions are meant as a preview to sequential recording.

PLACEMENT OF CODES

Pre-interaction data consist of Dimension _____ and Dimension _____(51) symbols recorded (where)_____(52)_____.

Interaction data consist of Dimension _____(53) and Dimension _____(54) and Dimension _____(55) symbols used to record nonverbal dimensions plus _____(56) used to record verbal behavior recorded (where)_____(57)_____.

1) Repeated tallying of the same category number identifies an extended verbal behavior. Example: _____(58) 9 seconds of lecture
   _____
   _____

2) Shifts in tallying different category numbers may identify:
   a) change in speaker Example: _____(59) teacher lecture followed by _____(60) student interruption
   b) change in content Example: _____(61) teacher lecture (changing to) _____(62) directions

Sequential recording of NVIA symbols in left column to replace verbal behavior category numbers

1) Repeated tallying of a Dimension II, Dimension II or Dimension IV combination of symbols identifies continuous use of a material; nonverbal behavior or an extended activity. Example: _____(63) Prolonged use of filmstrip (arrow, other _____ means may be used instead of repeated re- _____ cording of symbols).

(64) 9 second eye contact (dashes, checks, other markings) replace need for repeated recording of symbols.

2) Shifts in tallying Dimension II, III or IV (combination of) symbols identify changes in materials, nonverbal behaviors, activities.

Example: (65) Focus of attention shifts from informative (66) audiovisual aid to written directions at chalkboard as nonverbal sources of communication.

Sequential recording of category numbers and symbols in left column.

1) Shifts in tallying category numbers and symbols identify changes in means of communication. Example: (67) verbal statement of "good" followed by a (68) nonverbal smile may be used instead of a prolonged verbal praise statement.

Example: (69) Pointing or gesturing may replace a verbal (70) direction; this nonverbal communication is followed by a student's verbal response.

Example: (71) A teacher's verbal question is followed by (72) the student's writing the answer at the chalkboard instead of responding verbally.

Placement of codes in both columns

Sequential recording of category numbers in left column alongside NVIA

Symbol in right column may identify:

1) A material used to supplement the verbal presentation

Example: (73) (74) lecture supplemented by a printed material such as a magazine

2) Simultaneous verbal and nonverbal behaviors

Example: (75) (76) the teacher's verbal acknowledgment of a previous student's contribution

accompanied by the teacher's non-verbally holding up the model created by the student (in this instance, enclosing a category number is necessary to differentiate between a teacher and a student action)

3) Simultaneous teacher and pupil behaviors (activities)

Example: (77) (78) A teacher's verbal questioning activity accompanied by the students' writing the answers on their test papers.

Examples 1), 2), 3) above required (type of) (79) codes. Each identifies a type of activity. The three types of activities are (80).

The following description of interaction provides an opportunity for you to try out your understanding about the four types of codes by sequentially recording the described data. You may not wish to continue the quiz at this point if you do not feel comfortable about your recording abilities. INSTEAD STUDY THE LAST PART OF STEP 3 and then return to this part of the quiz.

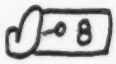
1.	(81) _____	(82) _____	Nine seconds of lecture supplemented by an audiovisual aid
2.	_____	_____	
3.	_____	_____	
4.	(83) _____	(84) _____	Followed by question cited from textbook
5.	(85) _____	_____	Student response
6.	(86) _____	(87) _____	Verbal praise accompanied by smile
7.	(88) _____	_____	Student initiation made by raising hand
8.	(89) _____	_____	Teacher verbal acceptance of this initiation followed
9.	(90) _____	(91) _____	by six seconds of student talking accompanied by teacher's
10.	_____	_____	nonverbal acknowledgment via eye contact
11.	(92) _____	_____	Six-second teacher verbal clarification of the preceding stu-
12.	_____	_____	dent's idea
13.	(93) _____	_____	Teacher's verbal directions followed by student going to
14.	(94) _____	_____	chalkboard
15.	(95) _____	(96) _____	Verbal directions accompanied by student writing the re-
16.	(97) _____	_____	sponse at the chalkboard. Six seconds of silence while stu-
17.	_____	_____	dent compltes written response; followed by teacher
18.	(98) _____	_____	praising students' chalkboard work. Ends lesson
19.	(99) _____	_____	by lecturing about content at chalkboard. On one
20.	_____	_____	occasion halfway through the lecture refers to the
21.	_____	_____	student who has written the content.
22.	(100) _____	_____	
23.	_____	_____	
24.	_____	_____	
25.	_____	_____	

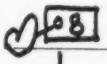
KEY TO QUIZ

1. simple
2. category number
3. symbol
4. category number
5. teacher
6. student
7. praise
8. response
9. symbol
10. 6
11. I
12.
13. 6 (4 pre-interaction)
14. II
15.
16. 5
17. III
18.
19. compound
20. symbol
21. category number
22. Dimension I
23. activity (Dimension IV)
24. furniture
25.
26. materials
27.
28. nonverbal behavior
29.
30.
31.
32. IV
33.
34. complex
35. both
36. right
37. left
*38. 5
39.
40. verbal
41. nonverbal
42. 2
43.
44. verbal
45. Dimension II, Dimension III
46. 5
47.
48. 10(s)
49.
50.
51. Dimension I, Dimension II
52. Observation form cover
53. II
54. III
55. IV
56. category numbers
57. in two columns of the observation form
58. 5, 5, 5
59. 5
60. 9

*Nos. 38-39; 42-43; 46-47; 48-49; 73-74; 75-76; 77-78 coded beside each other as in No. 50.

KEY TO QUIZ (CONT'D)

61. 5
62. 6
*63.
64.
65.
66.
67. 2
68.
69.
70. 8
71. 4
72. 
73. 5
74.
75. 3
76.
77. 4
78.
79. compound-complex
80. reading; writing; demonstrating

1. 5
2. 5
3. 5
4. 4
5. 8
6. 2
7.
8. 3
9. 9
10. 9
11. 3
12. 3
13. 6
14.
15. 6 
16. 10(s)
17. 10(s)
18. 2
19. 5
20. 5
21. 5
22. 3
23. 5
24. 5
25. 5

*For examples of extended coding, see Quiz Nos. 1-3; 9-10; 15-25.

C. STUDY CODE COMPONENTS IN SEQUENCE.

In Step No. 1 you reviewed the data and code components for each of the four dimensions. In Step No. 2 you previewed the use of the modified observation form and the use of the two columns. In Step No. 3 you learned the four types of code combinations. The material presented in Step Nos. 1-3 is truly understood only when you are able to apply the information by using the observation form and the code components to record data. Application implies knowing when and where to place the proper code components during an observational session.

All that remains is for you to learn the use of these codes. This is the final step before actual practice in coding. If you did well on the quiz, you might not need to dwell on the following information. If you encountered difficulty in questions 80-100, it is suggested that you retake the quiz after studying the following information about sequential recording. The examples of sequential recordings that follow provide an opportunity for you to identify individual codes and interpret sequential data.

The preceding four code types illustrated isolated examples of recorded data. The placement and sequence of these codes further identify the data by providing the context in which the behaviors occurred. Context refers to an over-all picture of the interaction describing:

1. *Durations* of verbal and nonverbal behaviors
2. *Changes* in speakers, use of materials, activities, etc.
3. *Relationships* between verbal and nonverbal dimensions

A complete description of the classroom interaction employs both IA and NVIA data, which allow for comparisons between the verbal and nonverbal dimensions. Such comparisons identify congruities, incongruities between verbal and nonverbal behavior, and relationships among nonbehavioral dimensions that may be consistent or inconsistent with the teacher's role. Individual symbols identify certain of these inconsistencies, but sequences of tallies offer more significant means for analyzing the recorded data.

Chapter V deals with analyzing the verbal and nonverbal data. As preparation for Chapter V, each of the following examples of sequential coding is accompanied by an interpretation of the recorded data. You may use these examples in several ways depending on your familiarity with the NVIA system.

You may wish to cover the verbal column and speculate about its content by consulting the nonverbal cues (i.e., try to identify the verbal behaviors you feel are indicated by the nonverbal symbols—the gestures, materials, etc.).

You may also cover the interpretation and develop your own analysis based on the verbal and nonverbal data. This programmed presentation should enable you to cover the content at your own pace. The examples become increasingly complex, since the four examples represent the four types of codes. The latter examples are composed of advanced data and may

be somewhat confusing at this point. However, the increased coding complexity should decrease confusion about the interpretation. The more elementary data provide more ambiguous interpretations. If you are able to interpret these data, you should have little difficulty acquiring skill in using the NVIA instrument.

EXAMPLES OF SEQUENTIAL CODING

Example No. 1 – Simple code sequence composed of category numbers describes verbal interaction by identifying who says what, when (i.e., speaker, content, sequence).

Interpretation:

5	Teacher lecture (15 seconds) followed by
5	
5	
4	A question (brief) followed by
9	nonpredictable student talk (brief) followed by
10	silence or confusion (6 seconds)
10	

Ambiguous: The content of the question, the meaning of the student talk, and the type of Category 10 behavior are not clearly identified.

Interpretation:

5M	Teacher's lecture is motivational (15 seconds).
5M	
5M	
4e	Teacher's question is intended to solicit student opinion (evalua-
9e	tion). Student's evaluative response is followed by
10s	six seconds of silence.
10s	

Ambiguous: The meaning of the six seconds of silence is still not clear.

Example No. 2 – Sequence including one compound code describes the verbal interaction, plus nonverbal behavior, by identifying who says and does what, when.

Interpretation:

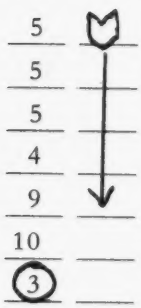
5
5
5
4
9
10
(3)

Teacher's facial expression communicates that the preceding silence or confusion is acceptable. (The nonverbal behavior is used to replace verbal acceptance; also explains reason for 10).

Ambiguous: Is there any relationship between the lecture, question, response?

Example No. 3 – Sequence including compound codes describes the verbal interaction, plus several nonverbal dimensions, by identifying who says, does, uses, what, when.

Interpretation:

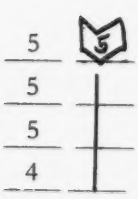


Additional NVIA data recorded in right column identify Dimension II printed material used as a supplement for teacher presentation; for question; and for student's evaluation.

Ambiguous: The exact use of the material may be unclear.

Example No. 4 – Sequence including compound-complex code describes the verbal interaction, plus the content of the nonverbal dimensions, by identifying who says, does, uses, what, how, when.

Interpretation:



NVIA symbol enclosing a category number identifies the use of Dimension II printed material. The contents provide the source of the teacher lecture and question, the basis for the student response. The teacher may have quoted information, asked for an

9	↓	evaluation (interpretation) of the information responded to. The
10		silence may have been intended to allow another student to re-
3		spond or to permit student participation by withholding teacher evaluation.

The preceding four examples show increased complexity of data recording. However, there is increasingly less confusion about interpretation of these data.

ALTERING THE RECORDING PROCEDURES

The NVIA recording procedures may be adapted to the particular demands of an observational situation. Such situations may include:

- specialized observational objectives formulated by special interest groups
- specialized observational methods or conditions such as the audiovisual equipment or an isolated observer
- specialized techniques for analyzing data and providing feedback

Adaptations Based on Specialized Observational Objectives

In situations requiring less than a complete description of the classroom, several dimensions may be deleted, and/or the recorded code components may be simplified. Therefore, the observer is not required to collect the same type and/or amount of data as presented in the preceding NVIA recording procedures.

Data for each of the four dimensions may be collected independently. Likewise, data for each of the two segments of observation may be collected independently. There are various combinations of the four dimensions upon which the classroom observation may be focused. Somewhere along the continuum of a simple to a complete observational description you should be able to find the data and code components to meet your own particular demands.

Be certain to note on the observation form cover any information that identifies such specialized objectives or limited foci. This information is especially important for reviewing and interpreting the data during analysis and feedback.

Adaptations Based on Specialized Observational Methods and/or Conditions

The following situations suggest that the "isolated" NVIA observer is responsible for fewer data than is the "in class" observer who is recording the content or type of items for all four NVIA dimensions. And this observer is responsible for fewer data than the single observer who is recording all four of the NVIA dimensions, plus the verbal interaction. The adapted recording procedures for each type of observer follow:

Isolated NVIA Observer

The isolated observer records NVIA Dimensions II, III, IV data via symbols in the right column of the observation form. If a category number is enclosed within a symbol to identify the type, use of a nonverbal item is optional. Category numbers entered into the left column are pure speculations about the verbal interaction, since the observer is unable to hear the content of the speaker's verbal behavior. Instead of trying to guess the verbal content, the observer may wish to identify the speaker by recording a T (teacher), P (pupils) in the left column alongside or instead of the NVIA symbols. This allows the individual who is using a verbal or nonverbal behavior (Dimension III) or a certain material (Dimension II) to be identified. Initials may be used to identify students if names are known. It may be desirable to maintain a three- or six-second recording interval by checking off tally spaces in the left column. This permits more reliable data comparisons to be made among observers.

The majority of codes are simple–consisting of Dimension II or III symbols. Compound codes may be required for activities. If the isolated observer is responsible for recording compound codes, such as identifying the content of a material, the contents of the NVIA symbol are enclosed as a category number only when there is visual proof of such a categorization. For example, if the chalkboard contains apparently factual information, this may be recorded as 5 . Certain categories of teacher talk provide more apparent cues than do others. Category No. 5 (lecture) may be inferred by the following cues: teacher position central; minimum of student interaction; majority of teacher talk; use of structured materials; student activities such as note taking; formal seating arrangements. Cues to Category 5 lessons or activities may be provided by the teacher writing at the chalkboard; or inferred from the use of informative types of materials, certain textbook titles, etc. The isolated observer is responsible for completing the information on the cover of the observation form, noting the time, objectives, etc. Visual cues that may indicate activity changes follow:

1. Physical movement of students; restructuring seating arrangements (e.g.: panels, committees, pupils going to desks for individualized seatwork, arranging chairs for group work, lining up for recess, library period, spelling bees, etc.)
2. Signals indicating a change in activities at the beginning of a new work period include bells, clock watching, students putting away work material, getting out new materials, distributing tests, workbooks, passing out or collecting papers, art supplies, etc.

In several of the above instances it may be necessary to begin a new observation form. In others simply note the time and the activity change. Again, the observational objectives may determine this procedure. The following situations usually require a new observational form:

1. Session changes–such as high school class periods beginning, completing a 40-minute period. Materials clues may indicate a special subject such as a chemistry, history, biology class, etc. Dismissing the pupils or entrance of a new group of students.

2. Seating changes—such as elementary classes rearranging desks for reading groups, committees, independent work groups.

3. Changes in materials, lessons—requiring special supplies, provisions. Examples: Teacher and students put away history materials (close textbooks, notebooks, put away audiovisual aids, maps, globes) and pass out spelling tests, sharpen pencils, clear desks. New activity begins by teacher referring to spelling word list, pronouncing word followed by students writing word.

The time element may influence the observer's decision to begin a new observation form. For example: if the teacher's lecture appears to be a brief five-minute introduction to a student's presentation, the content of the teacher-student presentation is probably related, and recording is continued on the same observation form with some sort of time notation and perhaps a brief description of the interchange that occurred.

Note the following information on the same observation form for changes in activities:

1. *Time.* (E.g.: 8:30-8:40 teacher lecture; 8:40-8:50 students ask questions of the teacher concerning the preceding lecture; 8:50-9:00 student-to-student discussion about the lecture).

2. *Number of pupils* engaged in an activity. (E.g.: 20 students recombine to form five "pre-assigned" work groups; or three groups composed of various numbers of students form, one group meets with teacher, no materials present, other two groups work independently with individualized type workbook materials; or two students present a report to the class; or seven volunteers go to the chalkboard and write math computations.

3. *Materials, supplies.* (E.g.: teacher changes from lesson plan to manual and students replace notebooks with textbooks. (The content of the activity remains focused on a geography lesson, the presentation style has changed from teacher lecture—students taking notes to teacher-student discussion of textbook content.)

If the purpose for assigning two observers is to compare the verbal and nonverbal data, then the following adapted procedures are important:

1. Note the time—both observers begin and end at exact time; keep periodic time checks by noting minute (and seconds, if possible). This is important, since the number of tallies collected by each observer will vary. Inconsistencies between the verbal and nonverbal behaviors are of primary significance. Thus, in order for a nonverbal behavior to be analyzed in relation to a verbal behavior, a precise means of time identification is necessary.

2. Standard Interaction Analysis tallying procedures are followed by the observer recording verbal interaction. Category numbers are entered in the left column.

3. The "nonverbal" observer records NVIA simple, compound, complex, or compound-complex codes into either or both columns. Thus, he identifies the use of

a material or nonverbal behavior to replace a verbal behavior in the left column, as well as the use of a material or nonverbal behavior to supplement verbal interaction in the right column. Also, activities are recorded as combinations of codes in either or both columns simultaneously. Similar means of identifying the speaker may include the suggestions for the isolated observers on Page 139.

4. Optional data for either observer may include:
   A. Noting the names, number of different pupils who participate (may identify teacher's pets, isolated)
   B. Expanded categorization may be appropriate for certain verbal behaviors. For example, the type of evaluation may be identified according to three subcategories of praise and three subcategories of criticism; the type of question may be identified according to four subcategories; for additional subcategories see Expanded Categories in the Appendix.
   C. Noting number of questions or style of asking questions, such as calling a student's name prior to posing the question, repeating the same question, "looking for" a particular answer, etc.
   D. Noting audience reactions to certain materials or teacher behaviors may be based on nonverbal cues indicating attentive, inattentive behaviors. For example, the use of a certain material during lecture may be motivational as judged by the heightened interest of the students. Such observer speculations should be marked by using parentheses, asterisks, etc. (*5M)

Single Observer Responsible for Both Verbal and Nonverbal Data

The single observer follows the procedures detailed in Steps No. 1-3. The following suggestions may make the recording of such a large amount of data less difficult.

1. Select another time interval, such as six, nine seconds. (Be sure to note this modification on the observation form.)

2. Note exact time for beginning and end of extended verbal behaviors—also prolonged use of materials, nonverbal behaviors and activities. Rather than repeating the same code components, note the exact time in minutes and seconds beside the column space and draw an arrow or checkmark through the appropriate number of tally spaces indicating the time sequence. Also enter the minute and second at which the extended behavior ceased.

3. During these extended verbal behaviors concentrate on the nonverbal dimensions.

4. If the observer has access to an audio recording, following the live observation, he may concentrate more fully on the nonverbal dimensions during the observation and record the verbal interaction afterwards. It is suggested that this be done as soon as possible so that cues are still vividly in mind.

5. During a prolonged presentation or activity, such as a lecture, assume that the contents of the supplementary materials are comparable to the content of the verbal presentation. This will not require enclosing a category number within each new

Dimension II symbol. However, be alert to any differences or discrepancies. For example, if the teacher is lecturing, the materials will probably be cognitively oriented. However, included in the lecture may be references to student-created items, such as models, original inventions, creative writing, etc. Note such changes by recording:

5
5
5
5

Three different cognitive materials supplemented the lecture. Also a student-created object was referred to. (May oftimes be legitimately interpreted as a Category 3 behavior.)

6. During a prolonged activity that includes a number of different participants, the observer may wish to record the Dimension IV code combination, note the time, and then concentrate on more particular data. For example, an activity in which a number of individual students approach the chalkboard to fill in the written answers may find the observer concentrating on the manner in which the students participate, such as teacher calling, pointing to, nodding at students, raising hands; the number and names of the students; the content of the questions written at the chalkboard (such as expanded category 4c math computations); the teacher's reactions to the students' written answers, such as smiling, verbal praise, nonverbally marking or correcting answers, etc.

Remember, NVIA is quite flexible and may be adapted to meet most observational demands. This is especially true when employing this technique for your own self-analysis. Practically any alteration is legitimate.

Adaptations Based on Specialized Techniques for Analyzing Data and Providing Feedback

NVIA data analysis and feedback techniques are presented in Chapter V. This final phase of an observation session implies that the individuals involved in interpreting the data are familiar with either the Interaction Analysis method of matrix construction or with the NVIA Data Analysis techniques. Analysis may be quite involved, depending on the complexity of the dimensions used in recording the classroom description. Therefore, there are several techniques for analyzing the data and providing the feedback. Selecting any of these techniques depends upon the scope of the data collection and the awareness level of the feedback recipient. Two of the possible techniques include:

1. The observer and the observed individuals review the raw recorded data. This technique may be useful in situations in which the observational focus was limited to one or two dimensions. The feedback session provides an opportunity for the observer and observed to meet and analyze the data in terms of the observational ob-

jectives by simply reviewing the recorded data (for example, if the teacher's stated objectives included using a certain number of materials). Was this objective accomplished? Analysis consists of simply counting the number of Dimension II symbols recorded.

2. The observed individual reviews the coded data in conjunction with audio- or video tape replay. The observed teacher reviews the recorded data while observing the live interaction via video, audiotape. The observer should be available for any discussion.

The first example involves the live method of observation; the second involves the delayed method. Chapter V presents the techniques by which each method analyzes the recorded data and provides feedback.

CHAPTER V

ANALYSIS AND FEEDBACK OF NONVERBAL INTERACTION ANALYSIS DATA

Chapter IV explained the procedures for collecting NVIA data. Chapter V presents techniques for analyzing these data and interpreting relationships between the nonverbal dimensions and the verbal interaction. Different observational methods may require different techniques for analyzing the raw data. Immediate observation relies on the observer's accuracy in recording data during a single observation session. Delayed observation has access to the live interaction and can review the data as often as necessary to objectify the analysis. A single observer can more readily analyze his recorded data than can two observers who must combine and compare their independently compiled verbal and nonverbal data. NVIA has developed several techniques for analyzing the data. One of the techniques is a modification of the Interaction Analysis procedure for analyzing verbal data. (See Appendix for an explanation of matrix construction.)

A complete NVIA observation depends upon two segments of data collection. The first segment is composed of data recorded prior to interaction. The second segment is composed of sequential nonverbal data recorded in conjunction with verbal behavior during interaction. NVIA's sequential matrix construction utilizes the data recorded during interaction. Data recorded prior to interaction are nonsequential and are thus analyzed differently, since such items may or may not affect the teacher-pupil interaction. There is a variety of techniques for analyzing both the pre-interaction and the interaction data.

SUMMARY REVIEW OF VERBAL AND NONVERBAL DATA

The simplest means of analyzing the verbal and nonverbal data collected by the single observer is to summarize the raw number of verbal and nonverbal occurrences. Inconsistent verbal-nonverbal behaviors, verbal ratios, percentages are readily tabulated, and feedback is immediate. This type of analysis summarizes the recorded data. The Summary Analysis form is aligned with the columns on the tally sheet. Also the Observation Form cover (Figure C) is consulted when the data are summarized. The example (Figure D) includes only one third of a tally sheet; also the Summary Analysis form is smaller. The broken line depicts this separate analysis.

Sequence is not analyzed. Instead, ratios between, among dimensions and categories are computed. The suggested tabulations may be expanded to include additional percentages, ratios, etc. The Figure D analysis form includes three separate summaries—a verbal summary, a nonverbal summary, and a comparative summary. It is used in the following ways to analyze the verbal and nonverbal data:

Verbal Summary

A. Count the number of verbal behaviors that occurred as each of the 10 categories. Enter this information under VERBAL SUMMARY column No. 1-10; total the number of verbal behaviors [14 total].

B. Compute the percent for each category. Enter this information under VERBAL PERCENT column (Categories 1-10); total percent of verbal behavior [70% total].

Nonverbal Summary

A. Count the number of pre-interaction items occurring as each of the 10 categories. Use the pre-interaction Dimension I, II data recorded on the observation form cover (Figure C). Enter this information in the NONVERBAL PRE-DIMENSION columns. Total the number of pre-interaction items [18 total].

B. Count the number of NVIA items recorded in each column on the tally sheet. Separate tabulation identifies either replacements for (left column) or supplements to (right column) verbal behavior. Enter this information separately in the LEFT and RIGHT NONVERBAL NUMBER columns (Categories No. 1-10). Total these NVIA interaction items [12 total; 6 left; 6 right].

C. Identify each of the NVIA interaction items according to Dimension II, III, or IV. Enter in the appropriate column. Total the number of items for each dimension [Dimension II = 2; Dimension III = 6; Dimension IV = 4].

Comparative Summary

A. Verbal comparisons

1. Compute ratio of teacher to student talk

$$\frac{\text{Categories 1-7}}{\text{Categories 8-9}} = \frac{10}{4} = 2.5$$

2. Compute ratio of indirect to direct teacher talk

$$\frac{\text{Categories 1-7}}{\text{Categories 5-7}} = \frac{4}{6} = .66$$

B. Nonverbal comparisons

1. Compute ratio of teacher to student nonverbal dimensions

$$\frac{6}{6} = 1.00$$

2. Compute ratio of indirect to direct nonverbal dimensions

$$\frac{2}{4} = .5$$

3. Compare number of nonverbal dimensions used to replace/supplement verbal interaction (number of symbols recorded in left column compared with number of symbols recorded in right column).

$$\frac{6}{6} = 1.00$$

C. Verbal-Nonverbal comparisons

1. Compute *ratio of verbal to nonverbal* (total number of category numbers compared with total number of symbols).

$$\frac{14}{12} = 1.666$$

2. Compute percentage of *verbal behaviors* occurring independent of nonverbal communication (without a nonverbal behavior Dimension III or an activity Dimension IV). Total number of category numbers not accompanied by NVIA Dimension III or IV symbol in the right column divided by total number of spaces in the left column.

$$\frac{10}{20} = 50\%$$

3. Compute percentage of *nonverbal behaviors*, activities occurring independent of verbal communication (without a verbal behavior). Total number of Dimension III and IV symbols recorded in left column divided by number of spaces in left column.

$$\frac{6}{20} = 30\%$$

4. Compute percentage of nonverbal behaviors and activities occurring *simultaneously* with verbal behaviors. Total number of Dimension III, IV symbols recorded in right column alongside a verbal category number recorded in left column divided by number of spaces in left column.

$$\frac{4}{20} = 20\%$$

5. Compute percentage of verbal and nonverbal *behaviors based on the use of a material* (number of verbal statements referring to a material, plus number of nonverbal behaviors utilizing a material); extended or repeated use of a Dimension II item or Dimension IV activity is recorded by dots following the symbols.

$$\frac{10}{20} = 50\%$$ (Half the interaction depended upon some sort of material or supply.)

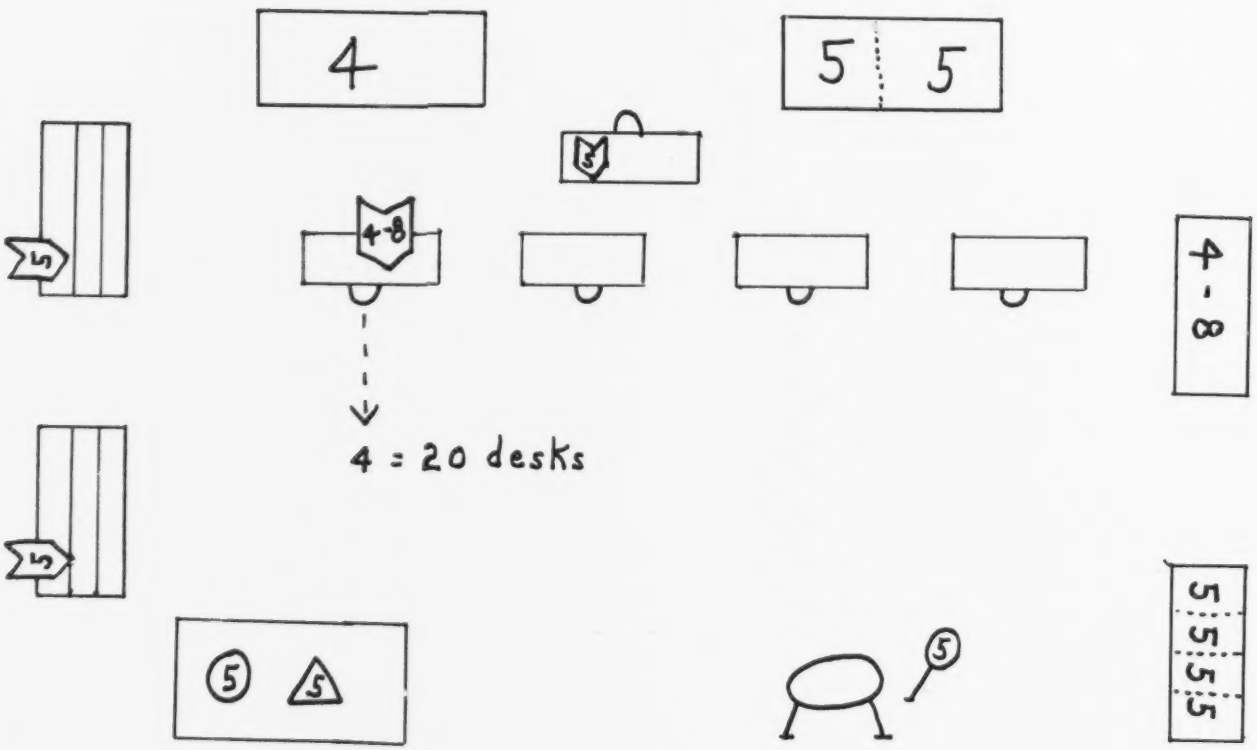
6. Identify each *inconsistent* verbal/nonverbal occurrence by writing the tally space in which it occurred. tally 14

COMMENTS: Enter any significant remarks, unusual occurrences. Information is largely dependent upon the discretion of the observer. It may include details pertinent to feedback, such as questions to be raised; uncertainties to be clarified for analysis; or information to be remembered by the observer, such as the type of material, mannerisms, gestures.

The above explanation refers to data recorded and analyzed by a single observer recording both the verbal and the nonverbal data. A similar analysis can be made for separate data collected by two observers independently recording verbal-nonverbal interaction. It is important that the two observers periodically note time intervals, since reliable comparisons depend on identifying simultaneously recorded behaviors. Certain information is optional and depends on the objectives of the observation. Therefore, it may not be necessary to compute certain ratios, percentages, etc. Other analyses may concern the expanded categories of behaviors so that comparisons among types of questions, types of lecture, types of evaluations, etc., are possible. For explanation of the expanded categories see Appendix B.

FIGURE C

OBSERVATION FORM COVER



Dimension I – Room Arrangement

* Traditional rows of seating are identified as Lecture (Category No. 5).

** Chalkboard contains written question (Category 4); other chalkboard contains outline and spelling list for the week (two Category No. 5). Bulletin board contains examples of student-completed tests (Categories 4-8); other bulletin board contents– see Dimension II – Materials below (** audiovisuals).

*** Tables, chairs, shelves contain cognitive type items (see materials below).

Dimension II – Materials

* Each printed item is identified according to content. The presence of dictionaries and encyclopedias on shelves, textbook at teacher's desk is recorded as three separate tallies in Category 5; workbooks at students' desks are recorded as Categories 4 and 8.

** Audiovisual aids found at bulletin board are identified according to content. The presence of a newsclipping, a map, teacher-constructed graph, and a printed table is recorded as four separate tallies in Category 5.

FIGURE D

SUMMARY ANALYSIS FORM

TALLY SHEET

	Left Column (Verbal)	Right Column (Nonverbal)
1.	5	
2.	5	
3.	9	
4.	9	
5.	5	
6.	4	
7.	8	
8.	2	
9.	5	
10.	6	
11.	8	
12.	8	
13.	8	
14.	4	7
15.	6	
16.	8	
17.	8	8
18.	2	
19.	6	
20.	2	8

VERBAL SUMMARY

	No.	%
1.		
2.	2	10
3.		
4.	2	10
5.	3	15
6.	3	15
7.		
8.	3	15
9.	1	5
10.		
Tot.	14	70%

NONVERBAL SUMMARY

	Number		Dimensions			
	Left	Right	II	III	IV	Pre(I,II)
1.						
2.	1	1		2		
3.						
4.						3
5.	1	2	2		1	13
6.						
7.		1		1		
8.	3	2		2	3	2
9.	1			1		
10.						
Tot.	6	6	2	6	4	18

Tot. 12

COMPARATIVE SUMMARY

Verbal

1) Ratio Teacher/Student Talk 10/4 = 25
2) Ratio indirect/direct Teacher Talk 4/6 = .66

Nonverbal

1) Ratio T/ST 6/6 = 1
2) Ratio I/D 2/4 = .50
3) Ratio Left/Right Columns 6/6 = 1

Verbal-Nonverbal

1) Ratio Verbal/Nonverbal	14/12 = 1.666
2) Percentage verbal alone	10/20 = 50%
3) Percentage nonverbal alone	6/20 = 30%
4) Percentage simultaneous verbal, nonverbal	4/20 = 20%
5) Percentage based on material	10/20 = 50%
6) Inconsistencies – Tally Space	No. 14

COMMENTS:

No. 1 (Material) Table of linear measurement

No. 5 (Activity) Teacher writes word "linear" at board following student request

No. 9 (Supply) Ruler

No. 12 (Activity) Student measures line with ruler

No. 14 (Verbal) "Does anyone disagree?" (NV) Frown

No. 19 (Verbal) "Write your answer at the board."

No. 20 (Verbal) Praises student writing answer at board.

Pre-interaction data suggests majority of Category No. 5 type interaction.

ANALYZING DATA VIA MATRIX CONSTRUCTION

The preceding Summary Analysis utilized individual tallies to compute verbal, nonverbal, comparative summaries of the data. The importance of sequential data was minimized. The following type of analysis emphasizes sequences in interpreting interaction. Interaction Analysis procedure of entering sequences of category numbers into a 10-row by 10-column grid called a matrix identifies changes in speakers, shifts in categories of behavior and extended verbal behaviors. Matrix analysis goes beyond computing the percentage of time a category of behavior, such as criticism, occurs to identify when the criticism occurs and the relationship between this and other behaviors. For complete explanation of matrix construction see Appendix A.

The following explanation of matrix construction is brief and somewhat incomplete. This explanation should suffice for the reader who is at all familiar with Interaction Analysis.

Explanation of Matrix Construction

Sequence of interaction is identified by entering each sequence of two category numbers into the 10-row by 10-column matrix. Each recorded category number is used twice. Each sequential entry identifies two behaviors. The first use of a category number identifies the behavior as preceding another behavior. The second use of the same category number identifies the behavior as following another behavior. Therefore, a student response (Category 8) can be identified within the following context:

Teacher:	"What do we call the science that studies relationships between man and his environment?" (Category 4, 4)		10	1st
		2nd	4	
			4	3rd
Student:	"Ecology." (Category 8)		8	
Teacher:	"That's right." (Category 2)	4th	2	5th
			10	

The above sequence of six numbers is entered into the matrix in pairs. A "10" is used to begin and end each data collection in order to balance the matrix. Each pair of numbers identifies a particular one of the 100 cells composing the matrix. *Any cell is pinpointed where a numbered row and a numbered column intersect.* The first pair of numbers is 10/4. *The first number in a pair indicates the horizontal row; the second number indicates the vertical column.* Therefore, the [10-4] cell is found where Row 10, Column 4 intersect. The teacher's question is extended for more than three seconds. Thus, the second pair—4/4—is entered into the Row 4, Column 4 cell. This [4-4] cell is a *steady-state cell* and indicates *extended* behavior. Student response, Category 8, follows the extended question. This 4/8 sequence is entered into the Row 4, Column 8 cell. Praise, Category 2, follows the student response 8/2 and the Row 8, Column 2 cell is used to enter the fourth sequence. The last pair of numbers—2/10—is entered into the Row 2, Column 10 cell. Notice each pair overlaps, so that each number is used twice. Each behavior is thus seen to precede as well as follow another behavior. The following example identifies the first use of a category number to locate the row; the second use to locate a column.

Columns *(Second)*

Rows *(First)*	1	2	3	4	5	6	7	8	9	10	
1											
2										I	
3											
4				I				I			
5											
6											
7											
8		I									
9											
10				I							
Total		1		2				1		1	5

The matrix total should be one fewer than the total number of tallies recorded. Pairing accounts for this discrepancy. A "10" is chosen to indicate silence as beginning and ending each recorded session. Also in constructing a matrix, "10" permits each row total to equal each column total.

The matrix contains 100 cells, of which there are two types. There are 90 *transition cells* identifying *a change* in behavior, 10 *steady-state* cells identify a *behavior lasting for more than three seconds.* Example: The 4-4 cell identifies an extended question.

NVIA modifies the use of both types of cells in constructing certain matrices. The matrix may be used in numerous ways to analyze the NVIA recorded data. Your selection of which technique to use may depend on the amount of data recorded or on the objectives of analysis.

Separate matrices may be constructed for each type of data, or various data combinations may be entered into the same matrix. The following possibilities should contain a suitable technique.

Constructing Separate Matrices

Three separate matrices may be constructed. An individual matrix for each type of data includes:

1. A separate NVIA pre-interaction matrix
2. A separate VERBAL interaction matrix
3. A separate NVIA interaction matrix

The following descriptions and examples are offered in explanation of such separate matrix analyses.

1. Separate NVIA Pre-interaction Matrix Analysis

   A separate matrix may be constructed for the NVIA pre-interaction data. The majority of items will be entered into the *steady-state* cells; included are such sources of information as texts, encyclopedias, etc. (Category 5–steady-state [5-5] cell). However, a workbook is identified as both a source of questions (Category 4) and an opportunity for students to respond (Category 8). As a question-answer material the workbook is entered into the [4-8] transition cell. This cell offers a more realistic index of the interaction that is likely to occur, since it identifies both a teacher and a student behavior.

   The data recorded on the cover of the Observation Form (Figure C) are used to construct the NVIA pre-interaction matrix. This matrix will *not* balance. Check the total to see if all items have been included. This technique is most useful as an *index* of cues indicating *areas* of interaction. For example, if the observer senses interdependence via cues offered by student -created bulletin boards (Categories 9-3), teacher acceptance of creative emotional efforts (Categories 9-1), etc., dependence via such cues as student models similar to the teacher's (Categories 6-8), penmanship papers displayed with blue stars for "good" and green stars for "poor" (Categories 8-2; 8-7), such speculative areas are identified in the transition cells of the pre-interaction analysis matrix. Post-observation comparisons can then be made to see if these cues were valid.

   Frequently three number sequences are indicated (A home economics room containing manuals for operating sewing equipment [Category 6], posters stressing step-by-step procedures for making a dress [Category 6], patterns [Category 6), teacher-selected displays of students' garments graded according to exactness with which the pattern was implemented [Category 2] and examples of poorly completed products displaying uneven seams, hems, etc. [Category 7]). Interaction sequences, such as 6-8-2, 6-8-7, might be speculated to occur in this classroom. Since sequence is recognized, matrix analysis can be seen to be quite different from the preceding summary analyses.

The following analysis utilizes the data recorded on the Observation Form cover (see Figure C). The construction of a separate NVIA pre-interaction matrix consists of the Dimension I and Dimension II tallies, which are entered into steady-state or transition cells.

When the Figure C data have been extended into the NVIA pre-interaction matrix, the following cells should contain a total of 18 tallies. The [5-5] steady-state cell contains 13 tallies; the [4-4] steady-state cell contains 3 tallies; the [4-8] transition cell contains 2 tallies.

NVIA Pre-interaction Matrix

	1	2	3	4	5	6	7	8	9	10	Total
1											
2											
3											
4				𝍸				𝍸			5
5					𝍸 𝍸 𝍸						13
6											
7											
8											
9											
10											
Total				3	13			2			18 *

*Tallies do not yield a balanced matrix.

2. Separate Verbal Interaction Matrix Analysis

A separate matrix may be constructed, utilizing only the verbal interaction category numbers. There are two alternatives for sequentially analyzing the verbal data.

A. A verbal interaction matrix may be one in which Category No. 10s are recorded during nonverbal activities or behaviors. This alternative might be used in situations in which the observer is isolated or is not familiar with the NVIA system. In such instances matrix construction follows standard Interaction Analysis procedures. In Figure E (next page) the recorded data are extracted from Figure D (see Page 149). The left column of sequential category numbers is used: the NVIA symbols have been replaced by Category 10s marked with an asterisk. The matrix constructed from these data accompanies the tallies. The matrix row and column totals should balance.

B. A second alternative is the verbal interaction matrix utilizing only category numbers sequences and ignoring the NVIA tallies. This technique might be used to distinguish silence or confusion (Category 10) occurring as part of the verbal interaction.

Modified matrix construction procedures entail omitting any NVIA left column tally and, instead, simply entering sequential verbal category numbers. Thus, the matrix total will not reflect the left column tally total. The recorded data in Figure F (see Page 156) are extracted from Figure D. The left column of category numbers is used; the NVIA symbols have been omitted. The matrix constructed from these data accompanies the tallies. The matrix row and column totals should balance.

Depending upon the objectives of analysis, each of the two alternatives for verbal matrix construction can be seen to have certain advantages. In Figure E the total number of left column tallies is represented (total 20). However, an interpretation of the seven Category 10 occurrences is difficult.

Figure F does *not* represent the left column tally TOTAL (total 15). Omissions indicate instances in which a nonverbal behavior or activity *replaced* verbal communication. Nevertheless, the sequences within which these nonverbal dimensions occurred are not identifiable.

3. Separate Nonverbal Interaction Matrix Analysis

A separate matrix may be constructed utilizing the NVIA symbols recorded during interaction. There are numerous alternatives for sequentially analyzing the novnerbal interaction data.

A. A NVIA interaction matrix may concentrate on nonverbal sources of communication, i.e., the nonverbal symbols recorded in left column, used to replace verbal interaction. This alternative is applicable in isolation situations restricting the observer to purely visual data. Similar

FIGURE E

(SEPARATE) VERBAL INTERACTION MATRIX

Category 10 substituted for NVIA tallies (See Figure D).

Left Column of Tally Sheet		1	2	3	4	5	6	7	8	9	10	
1.	10											
2.	5											
3.	*10											
4.	9											
5.	*10											
6.	4											
7.	8											
8.	2											
9.	5											
10.	6											
11.	*10											
12.	*10											
13.	8											
14.	4											
15.	6											
16.	*10											
17.	8											
18.	*10											
19.	6	TOTAL	2		2	3	3		3		7	20
20.	2 / 10	%										

Matrix Total

*Cells [10-5] and [2-10] identify first and last sequences of numbers.

FIGURE F

(SEPARATE) VERBAL INTERACTION MATRIX

Blank spaces represent omitted NVIA tallies (See Figure D).

Left Column of Tally Sheet		1	2	3	4	5	6	7	8	9	10	
1.	10 5	1										
2.	5	2				1					1 *	
3.		3										
4.	9	4					1		1			
5.		5				1	1			1		
6.	4	6		1					11			
7.	8	7										
8.	2	8		1		1		1				
9.	5	9				1						
10.	6	10				1 *						Matrix Total
11.		TOTAL		2		2	3	3		3	1	1	15
12.		%											
13.	8												
14.	4												
15.	6												
16.													
17.	8												
18.													
19.	6												
20.	2 10												

*Cells [10-5] and [2-10] identify first and last sequences of numbers.

to the preceding verbal interaction analysis (Figure E), Category 10* is now substituted for each verbal occurrence. The date in Figure G (next page) are extracted from Figure D. The Figure G matrix accompanies the NVIA left column data. The matrix row and column totals should balance. Comparisons between Figures E and G offer additional analyses.

B. A second alternative is the opposite of Figure F and now omits the verbal category numbers, utilizing only the NVIA symbols recorded in the left column. Again, the matrix total does not reflect the total number of Figure D left column tallies. Comparisons between Figures F and H (Page 159) offer additional analyses.

C. A third alternative utilizes all the NVIA interaction data recorded in both the left and right columns. The purpose for this analysis is to include each NVIA item in sequence, regardless of its use; i.e., all NVIA source and all NVIA supplements are entered into the matrix. The verbal interaction is ignored and the left column category numbers enclosed in parentheses appear only to identify NVIA symbols. For example, the audiovisual aid (in the first tally space of the right column) supplementary to lecture is identified as Category 5.

Matrix construction procedures are modified to include sequential entries of both left and right column symbols. The following example of sequential entries is extracted from Figure D (for complete matrix, see Page 160).

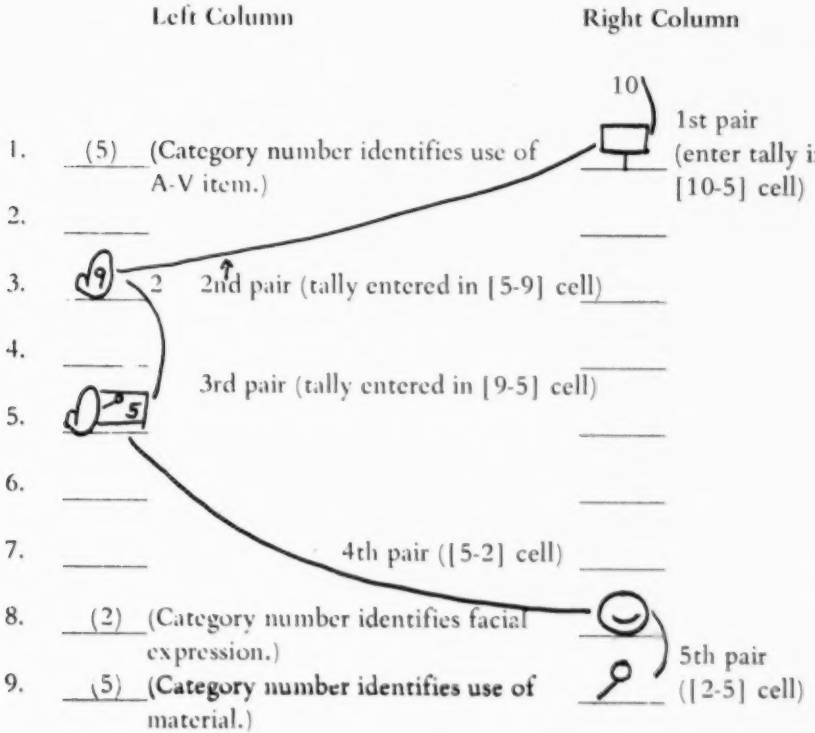

Left Column
Right Column
10
1st pair (enter tally in [10-5] cell)
1. (5) (Category number identifies use of A-V item.)
2.
3. 9 2 2nd pair (tally entered in [5-9] cell)
4.
3rd pair (tally entered in [9-5] cell)
5. 5
6.
7. 4th pair ([5-2] cell)
8. (2) (Category number identifies facial expression.)
9. (5) (Category number identifies use of material.)
5th pair ([2-5] cell)

FIGURE G

(SEPARATE) NONVERBAL INTERACTION MATRIX

*Category 10 substituted for each verbal tally (See Figure D).

Left Column of Tally Sheet		1	2	3	4	5	6	7	8	9	10	
1.	*10	1										
2.	*10	2									1	
3.	9	3										
4.	*10	4										
5.	*5	5									1	
6.	*10	6										
7.	*10	7										
8.	*10	8							1		11	
9.	*10	9									1	
10.	*10	10		1			1			11	1	Matrix Total
11.	8	TOTAL		1			1			3	1	15	21
12.	8	%											
13.	*10												
14.	*10												
15.	*10												
16.	8												
17.	*10												
18.	2												
19.	*10												
20.	*10												
	10												

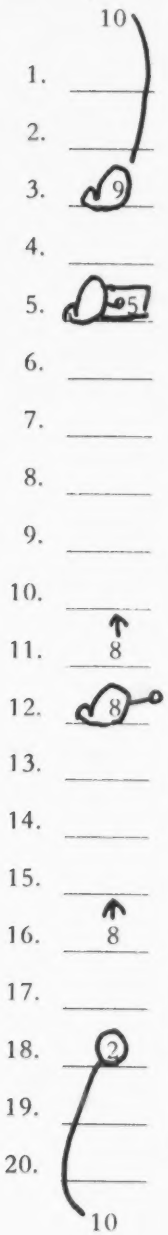
**[10-10] cell contains both the first and last sequence of numbers.

FIGURE H

(SEPARATE) NONVERBAL INTERACTION MATRIX

Left Column of Tally Sheet

Blank spaces represent omitted verbal tallies (See Figure D).



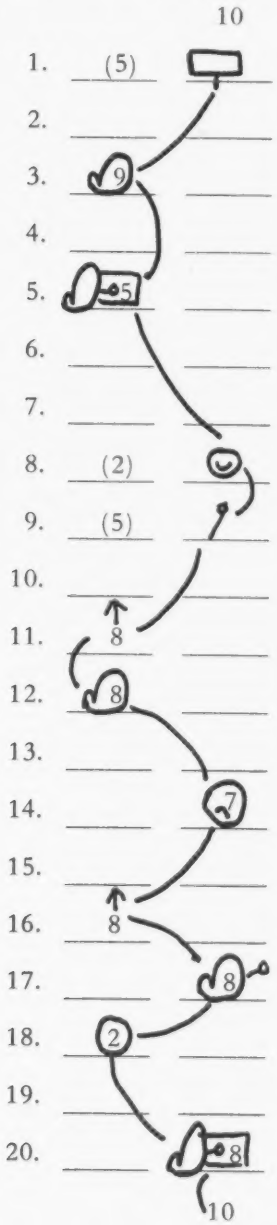
	1	2	3	4	5	6	7	8	9	10	Matrix Total
1											
2										| **	
3											
4											
5								|			
6											
7											
8		|						//			
9					|						
10									| **		
TOTAL		1			1			3	1	1	7
%											

**Cells [10-9] and [2-10] contain first and last sequence of numbers.

FIGURE I

(SEPARATE) NONVERBAL INTERACTION MATRIX

Verbal behaviors are omitted. Enclosed category numbers identify *use* of NVIA supplementary items.



	1	2	3	4	5	6	7	8	9	10	
1											
2					1			1			
3											
4											
5		1						1	1		
6											
7								1			
8		1					1	11		1 *	
9					1						
10					1 *						Matrix Total
TOTAL		2			3		1	5	1	1	13
%											

*Cell [10-5] and [8-10] contain first and last sequence of numbers.

Constructing Combined Matrices

The preceding three types of data (pre, verbal, nonverbal) may be integrated into a variety of combined matrices. NVIA modified the standard Interaction Analysis matrix by dividing each cell diagonally in half from the upper right corner to the lower left corner. This cell division permits two different types of data to be represented within the same matrix. One of the primary purposes is to yield a single source of analysis. Secondary purposes include comparisons between and sequential interpretations across dimensions.

The following analyses utilize the divided-cell matrix construction techniques. There are basically two types of data—the verbal and the nonverbal. Subdivisions (dimensions) are further found within the NVIA data system. Furthermore, division of the observation session into two segments allows for comparisons between NVIA pre- and interaction data.

The first group of combined matrices consists of NVIA data analyzed independent of the verbal data. The second group consists of NVIA data analyzed in relation to the verbal data.

Group 1. Combined NVIA Data Matrix Analysis

There are several variations for using the divided-cell matrix to integrate and interpret the NVIA data. The data may be analyzed and interpreted according to different dimensions and relationships among dimensions (such as types of behavior related to types of materials related to types of activities, etc.). Two possibilities are:

A. Combined NVIA pre-interaction and interaction matrix.

B. Combined NVIA source and supplement matrix.

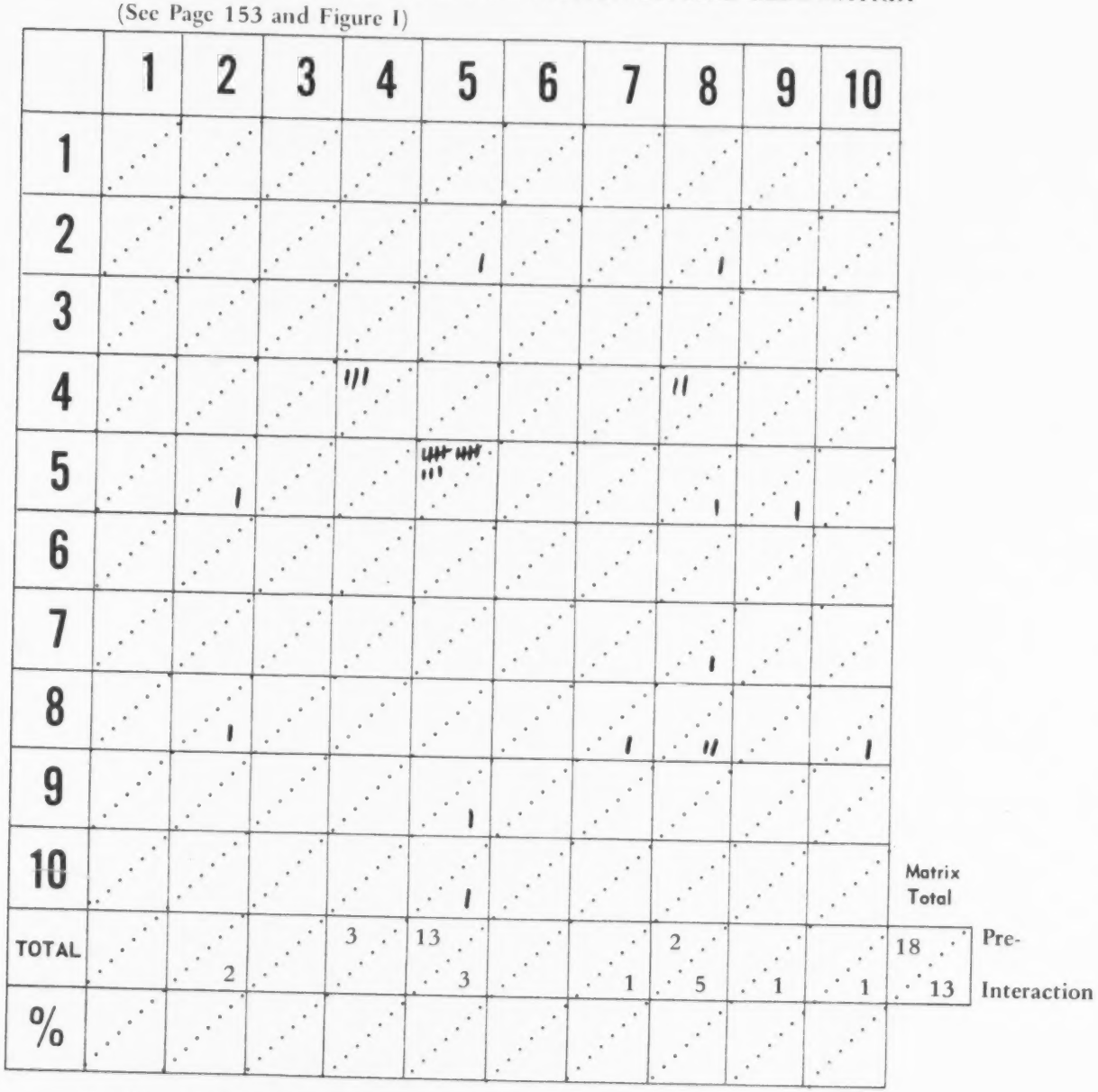
The following descriptions and examples explain such combined analyses utilizing the divided-cell matrix.

A. Examples of combined NVIA pre- and interaction data matrices integrate the Figure C matrix with either Figures G, H or I matrices. Such a divided cell matrix accommodates the *pre-interaction data in the upper half of each cell;* the *nonverbal interaction data in the lower half.* Any of the separate NVIA interaction matrices may be used in this combination. The data entered into the upper half are identical with those found on Page 153, and total 18 tallies. However, the tallies entered into the lower half of the divided cells will vary depending on the particular NVIA interaction matrix selected. Thus, the total number of tallies entered into the lower half of the matrix could be 21 (Figure G), 7 (Figure H), or 13 (Figure I).

   Figure J (see next page) combines the Page 153 and Figure I matrices. The columns and rows of the pre-interaction half of the matrix will not balance; those for the interaction half will. The areas of the matrix represented by the upper and lower halves of the cells should be similar. This would be anticipated if the materials and room arrangement were consistent with the teacher's style of interaction.

FIGURE J

(COMBINED) NVIA PRE- AND INTERACTION DIVIDED CELL MATRIX
(See Page 153 and Figure I)



Combination of Separate Matrices on Pages 153 and Figure I.

Pre-Interaction [4-8] cell data account for imbalances in rows, columns, 4 and 8.

B. The combined NVIA Source and Supplement Matrix includes the *total number of NVIA interaction items.* The divided cells analyze the function of each item according to its use as source or supplement. Verbal data are ignored. (Category numbers enclosed in parentheses serve to identify the functions of the NVIA symbols.) NVIA symbols recorded in the *left column function to replace* verbal interaction as the source of communication. These symbols are sequentially entered into the *upper half of the divided cells.* NVIA symbols recorded in the *right column function to supplement* verbal (or nonverbal) communication. These symbols are sequentially entered into the *lower half* of the cells. As in Figure I, sequential entries utilize both columns;i.e.,a pair of numbers may be composed of a right column tally and a left column tally. Therefore, although the cell halves do not balance for each row and column, the totals do balance. The following modification of Figure I identifies *extended use of supplementary materials, activities, etc.* Each marked tally space (•) indicates the continued use of a symbol so that the audiovisual aid symbol recorded in the right column tally spaces 1 and 2, and 3 through 7, supplements five different behaviors or is used for approximately 18 seconds. The tallies are entered in the following sequences:

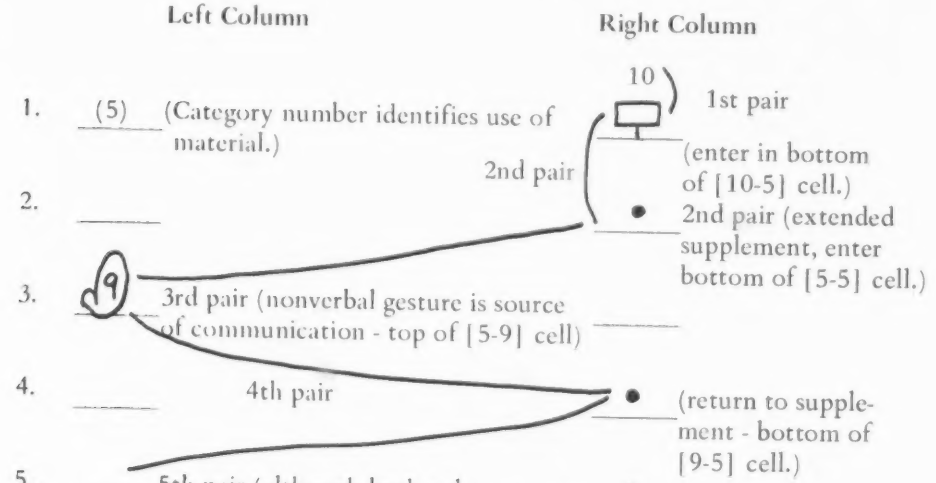
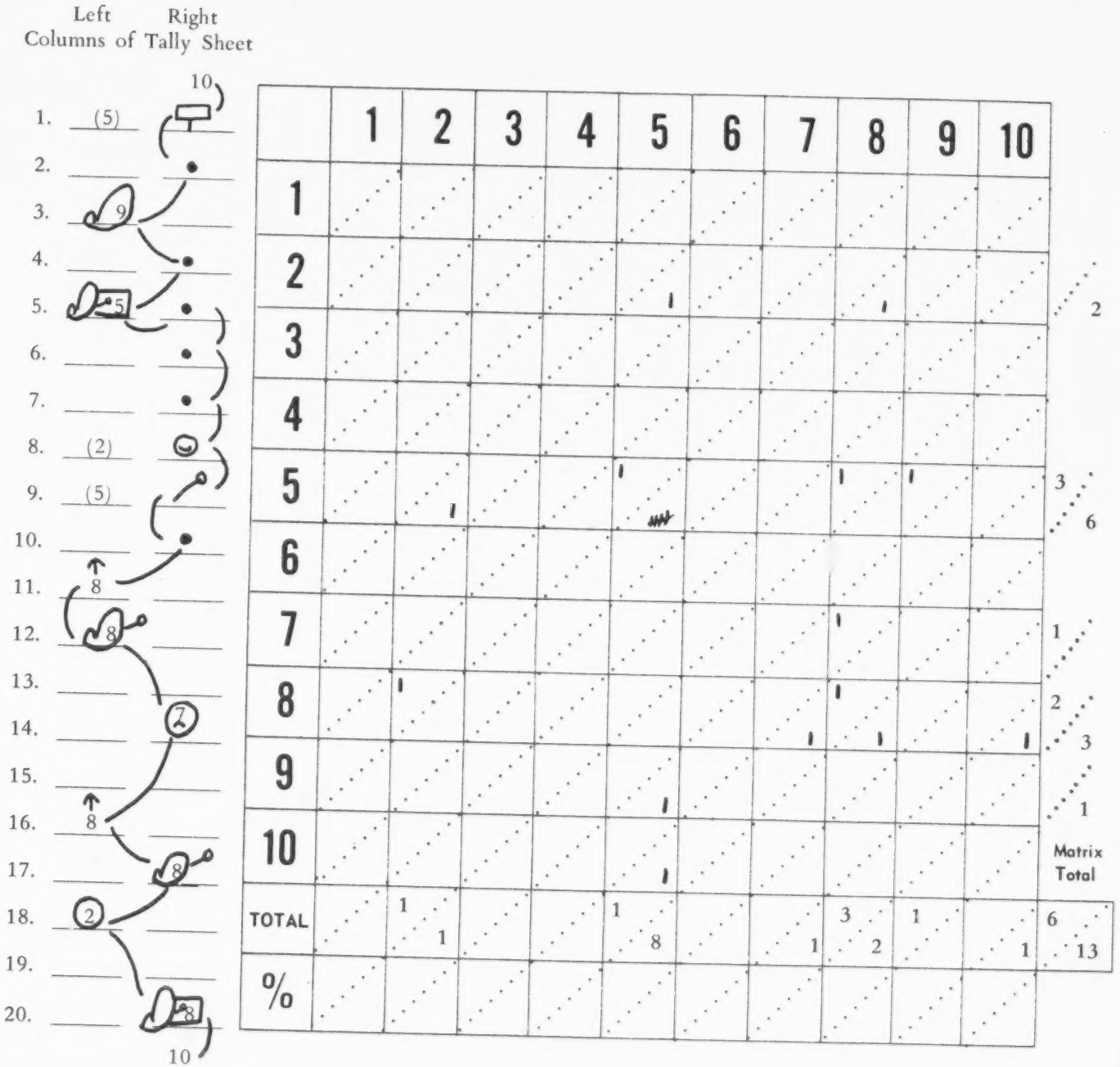

Left Column
Right Column
1.
(5) (Category number identifies use of material.)
10
1st pair
2nd pair
(enter in bottom of [10-5] cell.)
2.
2nd pair (extended supplement, enter bottom of [5-5] cell.)
3.
9
3rd pair (nonverbal gesture is source of communication - top of [5-9] cell)
4.
4th pair
(return to supplement - bottom of [9-5] cell.)
5.
5th pair (although both column spaces contain tallies; source takes precedence over supplement.
5th pair entered in top of [5-5] cell; the 6th pair identifying the simultaneous occurrence, returns to the supplement column. Enter into bottom of [5-5] cell.
For 6th pair see Figure K (next page) left and right column tally spaces number 5.

Figure K Completed matrix follows.

FIGURE K

(COMBINED) NVIA SOURCE/SUPPLEMENT DIVIDED CELL MATRIX

Blank spaces represent omitted verbal tallies. Category numbers enclosed within parentheses identify type and use of supplementary items. Tally spaces marked with • indicate extended use of supplementary items.



Cells [10-5] and [8-10] identify first and last sequence numbers.

Group 2. Combined Verbal-Nonverbal Matrix Analysis

The second group of combined matrices analyzes relationships between verbal and nonverbal data. Again, there are numerous possibilities for using the divided cell matrix. Sequential relationships, congruencies between verbal and nonverbal communication, comparisons among dimensions and cell patterns are all possible. Several possibilities are:

A. Combined matrix analyzing verbal and nonverbal sources of communication

B. Combined matrix analyzing verbal as source, nonverbal as supplement

C. Combined matrix analyzing verbal as source, nonverbal as either source of or supplement to communication

DEFINITIONS AND EXAMPLES:

(1) The combined verbal and nonverbal matrix analyzing the sources of communication utilizes the category numbers and symbols recorded in the left column. The verbal tallies are entered into the top half of each divided cell; the NVIA symbols in the bottom half. All the 20 tallies in the left column are used to construct the Figure L matrix. (See next page for Figure L.)

(2) The combined verbal as source, nonverbal as supplement matrix analyzes relationships between the verbal interaction and the use of the NVIA items as supplements to such verbal presentations or behaviors. Only the left column verbal category numbers and the NVIA symbols recorded in the right column are entered into the matrix. The left column NVIA symbols are omitted (See Figure D, Page 149). The following matrix construction procedure illustrates sequential entries from both columns (see Pages 157 and 163 for additional examples). A verbal source tally takes precedence over a nonverbal supplement tally.

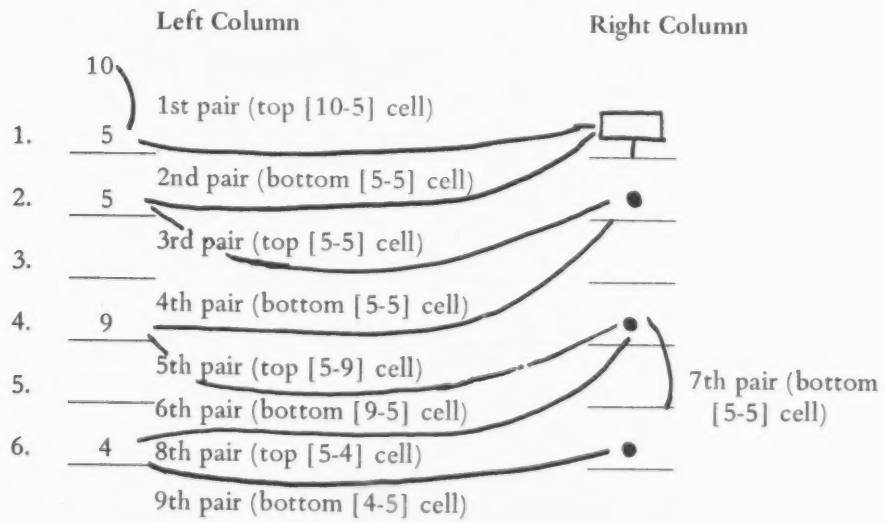


FIGURE L

(COMBINED) VERBAL/NONVERBAL SOURCE DIVIDED CELL MATRIX

(See Figure D.)

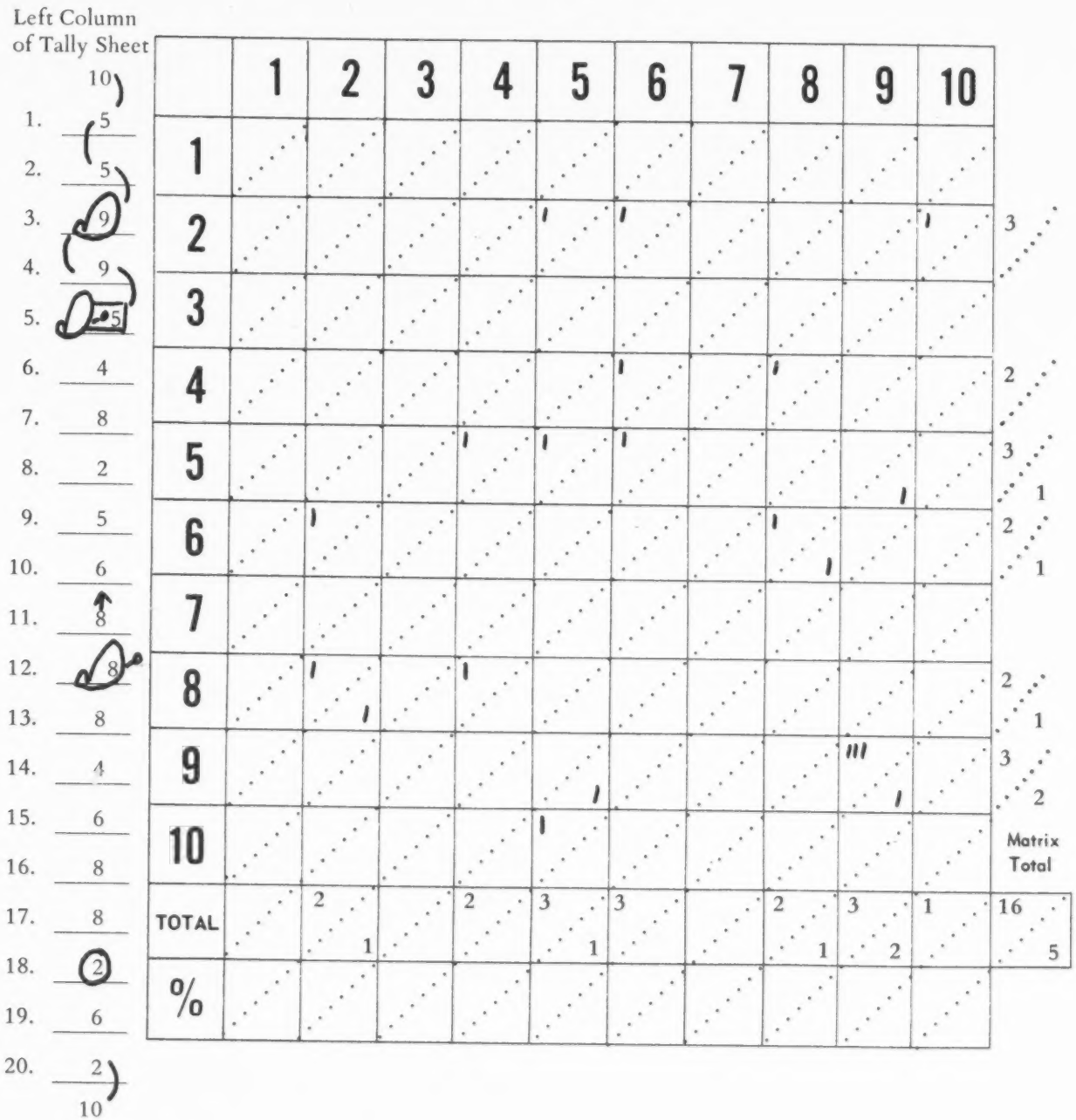


FIGURE M

(COMBINED) VERBAL AS SOURCE/NONVERBAL AS SUPPLEMENT DIVIDED CELL MATRIX

Blank spaces in Left Column represent omitted NVIA tallies.
(See Figure D.)

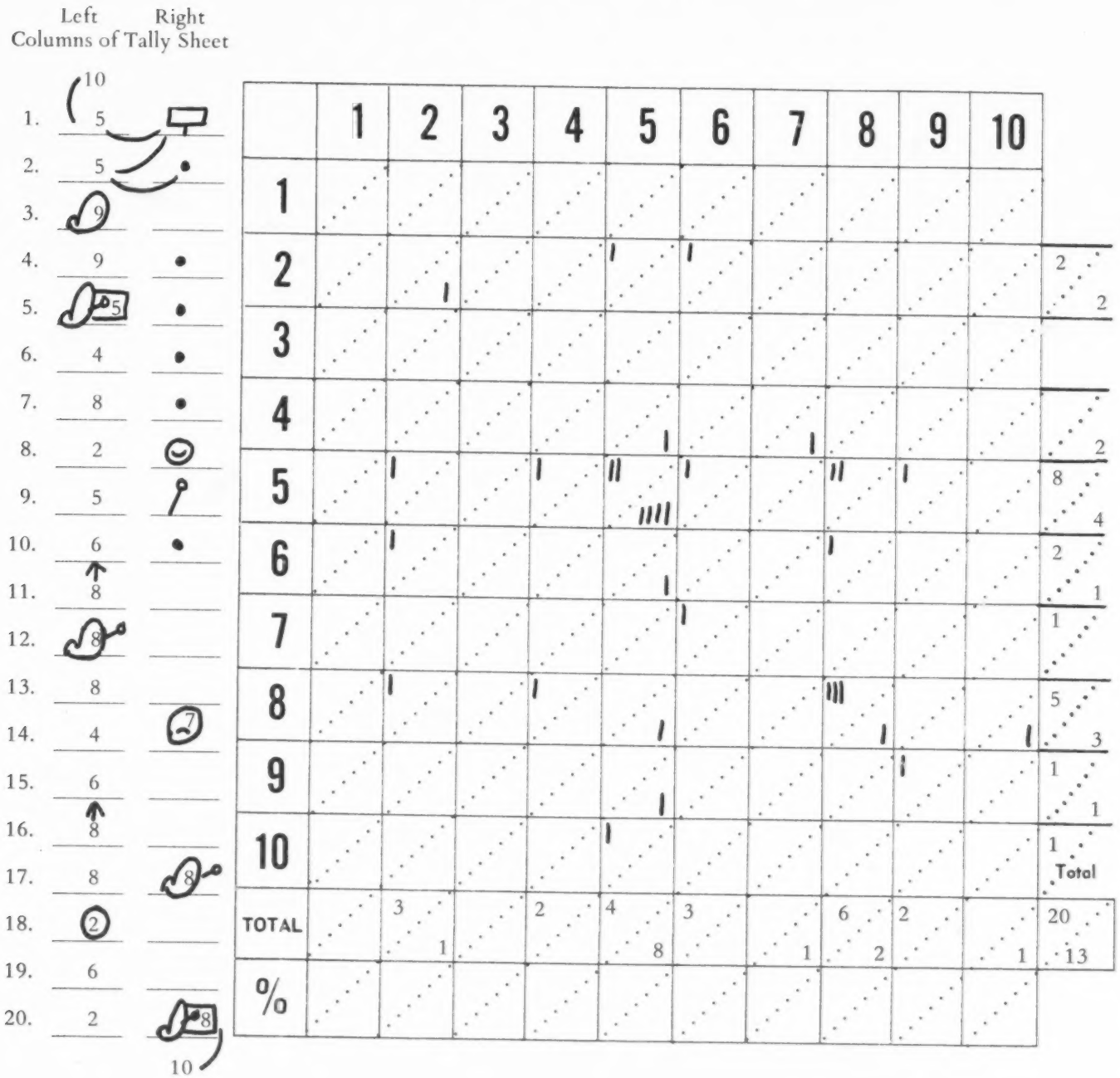
	Left Columns of Tally Sheet	Right
1.	5	
2.	5	
3.		
4.	9	
5.		
6.	4	
7.	8	
8.	2	
9.	5	
10.	6	
11.		
12.		
13.	8	
14.	4	
15.	6	
16.		
17.	8	
18.		
19.	6	
20.	2	

10

	1	2	3	4	5	6	7	8	9	10	
1											
2		1			1			1			
3											
4					1		1				
5		1		1	1 III	1		11	1		
6		1			1			1			
7						1					
8				1	1	1		1		1	
9					1						
10					1						Matrix Total
TOTAL		2 1		2	3 8	3	1	3 2	1	1	14 13
%											

FIGURE N

(COMBINED) TOTAL VERBAL, NONVERBAL SOURCE/SUPPLEMENT
DIVIDED CELL MATRIX



The upper and lower halves of each row and column do not balance; the totals do balance.

(3) The combined verbal as source and nonverbal as either source or supplement matrix analyzes all the recorded category numbers and symbols. The data from both the left and right columns are entered into the matrix. The source data (left column) are entered into the top half of each cell; the supplement data (right column) into the bottom half. (See Figure N, Page 168.)

COMPARING RECORDED DATA WITH TEACHER'S STATED OBJECTIVES

Comparisons between the verbal and nonverbal data identify congruencies between the actual interaction and the teacher's stated objectives. The pre-interaction data, as well as the interaction data, are both employed in this analysis. Dimension I and II items recorded on the cover of the Observation form may be found to be of importance in affecting the classroom interaction. For example, the classroom arrangement and materials may have been appropriate or inappropriate to accomplishing the teacher's objectives. If comparisons between pre- and interaction data are not found to be instrumental in promoting desired activities, these dimensions may be incongruent with the teacher's objectives. Such comparisons among the four dimensions may reveal how the items affect: the amount of student participation, the degree of student independence, the level of teacher control, the necessity for teacher intervention, the types of student-teacher and student-student communication, etc.

The feedback process, or session, implies that the teacher is somewhat familiar with the observational instrument; has defined her behavioral goals and is an active participant in analyzing the recorded data in conjunction with these objectives.

The complexity of the analysis depends on the teacher's level of behavioral awareness, knowledge of the NVIA observational instrument, and the details of the teacher's stated objectives. Therefore, a summary form (Figure D) or any of the matrix analyses (Figures E - N) may be used. Student reaction sheets may also be included as feedback.

The following three steps are extracted from the five steps as developed by SKIT. The entire five steps are presented in another section of this chapter—**Skill Practice.**

Step 1: Statement of Objectives
The teacher identifies the behaviors he intends to use in accomplishing the goals defined by the teaching situation. Identification includes each category of verbal behavior and each nonverbal dimension desired as an objective.

Step 2: Data Collection
The classroom interaction is recorded by using the NVIA observation system.

Step 3: Feedback
The results of the data collection are presented to the teacher following the observation. Immediate feedback is most desirable; however,

delayed feedback may be necessary. In the feedback session the observer or supervisor uses the data (Summary Analysis Form, Figure D, or Matrix Analysis Form, Figures E - N) to point out the ways in which the teacher's behavior did or did not correspond to the stated objectives. Student reaction sheets offer additional feedback. Video and audiotape replays permit repetition of the interaction and clarify the teachers' perceptions about the observed behaviors.

If the teacher is sufficiently familiar with the NVIA system, the above types of feedback may be replaced by self-analysis. In self-analysis, the teacher may record the interaction via video or audiotape and then tally the recorded data herself during the replay. In recording these data, the teacher takes the role of self-observer. Interpretation of the data may employ the summary or matrix analyses.

It is important that the first step, Statement of Objectives, be included. *Precise identification of behavioral objectives via category numbers and NVIA dimensions prior to interaction reduces the possibility of distorting the self-analysis.* The Comparative Analysis Form (Figure O) is filled out by the teacher *before* interacting in the classroom. Information includes identifying verbal objectives—each verbal category according to the amount of total classroom behavior consumed by that particular verbal behavior and the context within which that verbal behavior is intended to occur (i.e., the *sequence* of verbal behaviors anticipated). Nonverbal objectives include identifying each NVIA dimension item according to the *content or type* of item and the *context* within which the NVIA item is intended to be used. Symbols and/or descriptions may be used. Expanded categories are optional. An example of a tally sheet is found on the reverse side of the Figure O form.

Amounts of each behavior on Figures O and P vary. This is expected, since such approximations are behavioral speculations that depend primarily on the interaction that develops. Therefore, the teacher is cautioned that sensitivity to the situation takes priority over inflexible objectives. Comparative analysis identifies individual categories and percentages of verbal behavior (both teacher and student) and sequences of verbal interaction and nonverbal dimensions. The expanded categories may not be necessary to define the teacher's objectives.

The Figure P tally sheet contains a proposed pattern that is anticipated as occurring during interaction. It is a sort of preview strategy by which the teacher may rehearse her objectives. During feedback, compare the Figures O and P stated "goals" with the actual interaction that occurred during the observation. The content of feedback varies for each situation. However, much of the feedback consists of examining if, how, why the teacher's objectives were or were not met. For example, what was the percentage of each type of teacher talk, what types of student talk did occur, what might have been some reasons why the teacher did not get the amount or type of student talk she desired? Tabulations of categories and computations of ratios offered by a Summary Analysis (Figure D) might suffice for certain answers. Other answers may depend on sequential matrix analysis (Figures E - N). A sample feedback session is presented in the section "Conducting a Supervisory Conference."

FIGURE O

COMPARATIVE ANALYSIS

TEACHING OBJECTIVES

VERBAL

Category 1 – **amount:** **context:**

Category 2 – **amount:** *5%* **context:** *Reinforces logical thinking; viable suggestions, Categories 9-2 (Personal evaluation of creative ideas, Expanded Categories 9d-2p)*

Category 3 – **amount:** *15%* **context:** *Clarification, summarization of student ideas, Categories 9-9-3-3; (9d-3c; 9e-3s)*

Category 4 – **amount:** *10%* **context:** *Promote student discussion, Categories 4-9-9-9 (divergent, evaluations only - 4d-9-9; 4e-9-9)*

Category 5 – **amount:** *30% (maximum)* **context:** *Begin lesson 5-5-5 (orientational 5o; motivational 5m; during discussions as informative replies to student requests 9-5 [factual 9i-5f])*

Category 6 – **amount:** **context:**

Category 7 – **amount:** *5%* **context:** *Corrective criticism of illogical reasoning, inaccurate information 9-7 (Public criteria 9d-7P)*

Category 8 – **amount:** **context:**

Category 9 – **amount:** *20%* **context:** *Reacting to questions 4-9 (divergent, evaluative suggestions 4d-9d; 4e-9e) extended student-to-student discussion 9-9-9-10-9-9-9*

Category 10 – **amount:** **context:** *"Thinking time" following questions 4-10-9; noninterventions intervals during student discussions 9-10-10-9; 9-10-9*

NONVERVAL

Dimension I – * _____ ** _____ *** _____

context: Face-to-face circle arrangement of chairs

Dimension II – * 5F ** 5m ***

context: (Motivational) audiovisual aids introduce lesson; 5 (5m)

(factual sources) supply information 5F

Dimension III – * _____ ** 3 ***

context: Prolonged eye contact to communicate interest in student ideas 9

Dimension IV – * 5 above ** 5 ***

context: During discussion, materials quoted to supply information 5 5;

referred to by students to back up opinions 9e 5F; writing informa-

at the board may be necessary 5 _____.

Note: Italics represent teacher's handwritten entries.

FIGURE P

PROPOSED INTERACTION TALLY SHEET

The teacher identifies sequential interaction objectives by recording proposed behaviors.

	Left Column (Verbal)	Right Column (Nonverbal)
1.	5	
2.	5	
3.	5	
44.	4	
5.	10	
6.	9	
7.	3	
8.	9	
9.	5	
10.	9	
11.	7P	
12.	2p	
13.	9	
14.		
15.	10	
16.	10	
17.	9	
18.	9	
19.	3	
20.	3	

USING STUDENT REACTION FORMS

Student reaction forms identify the students' perceptions about the interaction, thus providing additional sources of analysis and feedback. Such reactions are often crucial in identifying inconsistencies between the teacher's verbal and nonverbal behaviors. This feedback is important in two contexts—to the teacher as a validity check against her own perceptions and to the observer as a validity check against the data recorded and analyzed. Comparisons among the observers' data analysis, the teacher's self-analysis, and the student's analysis promote valid intermember perceptions and credible observations.

Another SKIT innovation, the student reaction form, allows students to participate in analyzing the classroom, by helping the teacher understand the effects of his behavior, reasons why his objectives were or were not met may be revealed. Such cooperative efforts promote increased student commitment to, interest in, and awareness of classroom interaction. The student reaction forms contain questions that correspond to the teacher's stated objectives. For example, if the teacher's stated objectives included using acceptance of student ideas (Category 3) in order to promote student-initiated contributions, then questions such as the following might be asked of the students:

1. "Did you feel that the teacher's verbal behavior encouraged you to express your own ideas?"
2. "Did the teacher react to your verbal participation in an evaluative or nonevaluative manner?"
3. "How frequently did you talk?"
4. "What percent of the time do you think the teacher talked?"
5. "Were the students generally active in the lesson or did the teacher seem to handle most of the discourse?"
6. "Did the teacher intervene in student-to-student talk? Were such interventions requested by the students?"
7. "Were the materials effective for the lesson? Did they tend to promote original use by the students or were they used in a highly structured manner?"
8. Check: Did the teacher seem to be
    - A. Lecturing
    - B. Giving directions
    - C. Asking narrow questions
    - D. Evaluating - praising, criticizing
    - E. Responding to the students

USING TEACHERS' SELF-EVALUATING FORMS

This analysis is intended to make the teacher more aware of her actual behavior. The self-completed form is used after the teacher has interacted with the class. Figure Q analysis form includes a subjective self-evaluation that is then compared with the objective observational data collection. The purpose is to compare the teacher's self-perceptions with those of the observer. Student reaction forms may also be compared. Such comparisons should increase self-awareness. The items on the teacher's self-analysis form may be developed by the observer or they may be similar to the questions on the student reaction forms. *The content of the questions should be based on the teacher-stated objectives.* The answers require that the teacher review in retrospect her behavior during the interaction with the class. This review should be done as soon after class as possible so that the teacher's recall is not distorted. Comparisons between the teacher and student reaction forms are suggested if disagreement occurs. Class discussions may reveal reasons for such disagreement and are beneficial in increasing student-teacher rapport and interpersonal communication. The questions in Figure Q are suggestions for focusing such a self-evaluation.

FIGURE Q

TEACHER SELF-EVALUATION FORM

1. Are there any habitual behaviors of which you are aware?
2. Are there any simultaneous verbal and nonverbal behaviors of which you are aware?
3. Are there particular students to whom you react positively?
4. Are there particular students to whom you react negatively?
5. Are there certain activities you favor?
6. Are there certain activities you dislike?
7. Are there certain subjects you favor?
8. Are there certain subjects you dislike?
9. Do you tend to evaluate or react nonevaluatively to student responses?
10. Do you tend to look for "a certain answer" when calling upon students?
11. Do you intervene in student-student discussions?
12. Identify the behavior you used most frequently during the lesson.
    a. lecture
    b. directions
    c. questions
    d. evaluation
    e. acceptance

CONDUCTING A SUPERVISORY CONFERENCE

Any observational session is only as valuable as the extent to which the data are used. This section deals with the supervisory conference and explains the importance of giving and receiving feedback in the helping relationship. The manner in which feedback is provided and received often determines the extent to which behaviors are understood and modified.

The supervisor is an important figure in the helping relationship. His behavior determines the climate within which the teacher-supervisor conference occurs. A climate of acceptance and support is necessary for the teacher to acknowledge the reality of his present behavior, state modifications, and try future innovations. Such a relationship promotes trust and mutual confidence. Nonevaluative, supportive comments establish nonjudgmental, nonthreatening rapport. Thus, the teacher is able to involve himself in a program of behavioral study and modification. Increased behavioral awarenesses and improved communication require opportunities to practice and analyze behaviors. Fundamental to such experimentation is an atmosphere free of criticism and/or praise.

Decisions about which behaviors are the most effective do not lie with any one individual. Although the teacher is ultimately the person responsible for developing new behaviors and improving his means of communication, research has shown that the actor (teacher) is rarely his own best critic. Colleagues and administrators may provide insights. There is a multitude of analytical techniques and interpretative devices of which the supervisor is but one. Therefore, this supervisory role, although including encouragement, does not include criticism. The supervisor is instrumental in initiating and encouraging a program of behavioral study. In this capacity he may play the role of objective observer. However, any judgmental reaction can serve only to limit the teacher's freedom of experimentation.

To resist the role of interpreter and critic is difficult, but worth while if real self-improvement is to occur. Some guides to assisting the teacher analyze behaviors are offered. These questions and the strategies for arriving at answers increase the teacher's awareness of his role and its effect on the interaction. The first group is concerned primarily with verbal behavior; the second group with nonverbal dimensions.

Question-and-Answer Strategies Used in the Supervisory Conference

1. Verbal behavior
   - A. How frequently do you talk?
     Study percentage of teacher talk.
   - B. What types of verbal behavior do you use?
     Compute ratios between categories; direct, indirect categories, etc.
   - C. In which sequence do these verbal behaviors occur?
     Construct matrices.
2. Nonverbal dimensions
   - A. How relevant are the physical surroundings?
     1) Do desks permit access to materials

2) Are desks arranged to facilitate activities?
3) Are materials structured to activities, etc?

B. What nonverbal behaviors, if any, do you plan?

C. What activities include materials and nonverbal communication?

The supervisor may compare the teacher's stated objectives with the recorded data and/or the student reaction forms in analyzing such questions or to ascertain reasons for any discrepancies. For example, if the teacher feels that she does not have any verbal, nonverbal inconsistencies and the student feels that the opposite is the case, playing the videotape or checking the recorded data may reveal the reasons for such discrepancies. Perhaps the teacher is totally unaware of her nonverbal mannerisms. In this case *viewing* the interaction might immediately dissolve such unawarenesses. However, after checking with the recorded data, the teacher may still remain biased and insist that the nonverbal gestures were not intended and in fact, did not occur. In both situations skill practice may be beneficial.

SKILL PRACTICE

Skill practice, as developed in the SKIT literature (see Appendix C), provides an opportunity for the teacher to practice and analyze new behaviors. Originally intended for use with Interaction Analysis verbal behaviors, the technique has been extended to include nonverbal behaviors. With the increasingly widespread use of videotape equipment, the study of nonverbal behavior has been facilitated. School systems with access to videotape equipment may make excellent use of this technique in studying the classroom interaction.

The use of videotape in in-service training provides an opportunity to view and analyze present behaviors. Such programs can be extended to include innovations and behavioral modifications. This requires objective analysis and feedback offered in a climate of support and acceptance. The basic assumption is that every individual is curious about himself and desires a more effective means of communicating. The steps required in practicing and changing behavior are the following:

1. Stating behavioral objectives (Identifying I.A. verbal categories and NVIA dimensions—See Figures O, P)
2. Practicing behavior (Trying to use a variety of verbal and nonverbal behaviors)
3. Collecting data (Observing and recording the practiced behavior)
4. Feedback (Analyzing the recorded data via matrix construction or data review summary—See Girues D - N)
5. Repetition (Trying again to accomplish the stated objectives or modifying the objectives to include new behaviors, follow the above steps.)

VIDEOTAPE ANALYSES

Videotape replay extends observation and analysis possibilities. The number of observers can be increased; the descriptions can be broadened. Replayed observation may focus upon the teacher, then the students, then the content, etc. Each of the NVIA dimensions can be concentrated upon individually. For example:

A. Room Arrangement

1. Was it suitable to the teacher's stated objectives?
2. Was it changed during the observation?
3. Could all the students see, hear the speaker?

B. Use of Materials

1. Number of different materials
2. Use of content—was the lesson dependent on certain materials for information, questions, answers?
3. Did students have individual texts, materials, supplies?
4. Were all the materials present related to an interaction activity (i.e., did the large machinery and equipment have a significant purpose, use)?

C. Nonverbal Behaviors

1. How significant were the teacher's movements; students' movements?
2. Were the gestures used to control, direct? Did they indicate anxiety?
3. Were students required to raise hands or did students appear free to interrupt the teacher?
4. How many different students participated? What was the sequence, length of their participation?
5. Did the teacher react differently to different students?

D. Activities

1. Did the teacher control or share control with the students?
2. Was there emphasis on reading, writing, or was there a variety of activities?
3. How did the teacher use prepared materials? Cite verbatim, refer to, etc.?
4. What did the teacher do during students' silent seatwork activities? Were there small group activities?

E. Sequence—Items of interest to note

1. What, if any, teacher behaviors preceded student participation (Ex.: point, nod, acknowledge, give permission)?
2. What, if any, teacher behaviors followed student participation (Ex.: ignore, laugh nervously, smile, attentive)?
3. What student behaviors preceding participation (i.e., raise hands, speak freely, stand up) may be cues to degree of direct/indirectness?
4. How did students react to one another—physical contact, interruptive, ignore each other, supportive, competitive, etc.

5. What was ratio of verbal to nonverbal interaction? Comparisons among dimensions, such as content of verbal behavior related to contents of materials, number of questions, length of responses, number of verbal reactions, number of nonverbal reactions.
6. During prolonged or lengthy observations it may be interesting to note:
   a. Does amount of physical movement decrease during the day?
   b. Do signs of boredom increase?
   c. Do discipline problems increase?
   d. Does use of nonverbal negative behaviors increase?

Videotape replay increases the scope of observation to include a number of persons. However, with an increased number of observers, there must be increased skills of observation, which are necessary for agreement among analyses. For example, if the videotape is seen, coded, and analyzed by six people, there will be an increased possibility of disagreement. Therefore, although replay advantages may increase observational accuracy, this accuracy may also depend on observational awareness.

Increased perception and extension of one's behavioral repertoire may occur in the following stages of a developmental program:

A. Discovery stage in which group members:
   1. View themselves for the first time on camera.
   2. Discuss their different perceptions of the taped behavior.
   3. Formulate a system for analyzing their behavior.

B. Replay stage in which group members:
   1. Apply their system by analyzing their behaviors.
   2. Discuss their analyses.
   3. Formulate behavioral modifications and/or reassess their system for analysis.

C. Modification stage at which group members:
   1. Try out new behaviors.
   2. Analyze one another's behaviors.
   3. State behavioral objectives and a means for accomplishing these modifications.

In summary, there appear to be at least four interpretations of the same classroom situation, that may be helpful in analyzing the interaction.

1. The observer's immediate interpretation of the behaviors as recorded during interaction.
2. The teacher's immediate interpretation of his own and the students' behaviors during the interaction; secondly, the teacher's interpretation of the feedback following observation.

3. The students' immediate interpretations of their own and the teacher's behaviors during the interaction; secondly, the students' analysis of the teacher's behavior following the interaction
4. Outside sources of analysis, such as a principal, supervisor, or another teacher

Agreement among the four interpretations necessitates that each interpreter be familiar with the NVIA system of observation. Agreement offers valid feedback only if each interpreter's perceptions are reliable. All the techniques described in this manual are intended to be vehicles by which the teacher may study his own classroom interaction. Modifications of behavior come about only through such analyses. The Appendix contains references and additional sources for implementing such behavioral studies.

APPENDIX

A. Basic Interaction Analysis System 181

B. The Expanded Interaction Analysis Category System 185

C. Using the Category System in the SKIT Model 189

APPENDIX

A. BASIC INTERACTION ANALYSIS SYSTEM

The basic Interaction Analysis System has ten categories for teacher and pupil verbal behaviors. Categories 1, 2, and 3 correspond to what may be called kinds of indirect teacher influence. Category 1 is for acceptance of student feeling, Category 2 is for praise and encouragement, and Category 3 is for acceptance of student ideas. Category 4 is for questions by the teacher requiring student responses. Categories 5, 6, and 7 designate direct teacher influence statements. Category 5 is for lecturing and giving information, Category 6 is for directions students are expected to follow, and Category 7 is for statements critical of the student. Two of the remaining three categories are used for student talk, and the third is a miscellaneous category. Category 8 is for student response to a narrow, specific question by the teacher. Category 9 is for student response to broad teacher questions requiring expression of the student's own ideas or for student-initiated talk. Category 10 is used for periods of silence, confusion, and occasions when a number of children are talking at once, or for miscellaneous behavior (typically nonverbal) that does not fall into any of the first nine categories. (A summary of categories is presented in the following table for your convenience.)

A category number is recorded by the observer every three seconds in order to get a complete sequential picture of classroom interaction. If a single verbal behavior lasts for longer than three seconds, the same number is recorded every three seconds until a different category of behavior occurs. An example of some classroom interaction might be as follows:

Teacher: "Open your books to page five." (A "6" is recorded.)

Student: "I don't have a page 5 in my book." (A "9" is recorded.)

Teacher: "You have the wrong book; no wonder." (A "7" should be recorded.)

Teacher: "All right, now, what do you think was the most important point that the author talked about on page 5?" (This question lasted for five seconds; therefore, two "4's" were recorded in sequence.)

Student: "The book said that the most important point was that the United States developed a culture similar to the European culture." (The student's comment lasted for approximately twelve seconds; three "9's" are, therefore, recorded.)

The observer's coding of the above interaction sequence looks like this:

6
9
7
4
4
9
9
9

Each number is then paired with the number preceding it *and* the number that follows it, and each pair is entered into a summary matrix. The cell in which the pair will be entered is found at the intersection of the row corresponding to the first number and the column corresponding to the second number. The first pair is the 6-9, for example, and this would be located in the cell at the intersection of Row 6 and Column 9. The next is 9-7, which is located in the cell at the intersection of Row 9 and Column 7. The next is 7-4, which is entered in the cell for Row 7 and Column 4. The next is 4-4, which is entered in the cell intersecting Row 4 and Column 4. The next is 4-9, entered at the intersection of Row 4 and Column 9. The last two tallies will be entered in the cell at the intersection of Row 9 and Column 9. (See Sample Matrix, next page.)

SUMMARY MATRIX

	1	2	3	4	5	6	7	8	9	10	
1											
2											
3											
4				1					1		
5											
6									1		
7				1							
8											
9							1		2		
10											Matrix Total
TOTAL											
%											

CATEGORIES IN THE BASIC INTERACTION ANALYSIS SYSTEM

TEACHER TALK	INDIRECT INFLUENCE	1.* **ACCEPTS FEELING**: accepts and clarifies the feeling tone of the students in a nonthreatening manner. Feelings may be positive or negative. Predicting or recalling feelings is included. 2.* **PRAISES OR ENCOURAGES**: praises or encourages student action or behavior. Jokes that release tension, not at the expense of another individual, nodding head or saying "um hm" or "go on" are included. 3.* **ACCEPTS OR USES IDEAS OF STUDENT**: clarifies, builds, or develops ideas suggested by a student. As teacher brings more of his own ideas into play, shift to Category 5. 4.* **ASKS QUESTIONS**: asks a question about content or procedure with the intent that a student answer.
	DIRECT INFLUENCE	5.* **LECTURING**: gives facts or opinions about content or procedure; expresses his own ideas, asks rhetorical questions. 6.* **GIVING DIRECTIONS**: gives directions, commands, or orders to which a student is expected to comply. 7.* **CRITICIZING OR JUSTIFYING AUTHORITY**: statements intended to change student behavior from nonacceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK		8.* **STUDENT TALK–RESPONSE**: talk by students in response to teacher. Teacher initiates the contact or solicits student statement. 9.* **STUDENT TALK–INITIATION**: talk by students, which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.
		10.* **SILENCE OR CONFUSION**: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

*There is **NO** scale implied by these numbers. Each number is classificatory; it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.

B. THE EXPANDED INTERACTION ANALYSIS SYSTEM

In the Expanded Interaction Analysis system each category is broken down into two to four subcategories that are used to examine the behaviors that fall into each individual category in greater depth and detail. Differences in the ways in which various statements in the same category function in classroom interaction are studied with the expanded system. The Skits provide practice in using behaviors that fall into each of the subcategories and an opportunity to study the differences in the effects of each in classroom interaction.

The subcategories that have been developed for the Expanded Interaction Analysis system have come out of attempts to integrate some of the work of Marie Hughes, Hilda Taba, and James Gallagher and Mary Jane Aschner with work done in Interaction Analysis at Temple University in the last few years.

Category 1 – Accepts Student Feelings

1a – Acknowledges feelings. The teacher simply acknowledges the presence of some feeling in the classroom; she may identify the feeling by name.

1c – Clarifies feelings. The teacher attempts to relate the feeling he observes to a probable cause.

1r – Refers to similar feelings of others. The teacher indicates that the feeling he observes is natural or normal by referring to similar feelings that he has, or that people in general have, in like circumstances.

Category 2 – Praises

2w – Praises with no criteria. The teacher tells the student he is right or that what he has done is good, but gives no reason for the positive evaluation.

2P – Praises with public criteria. The teacher praises the student and gives a reason for the positive evaluation that is publicly verifiable and acceptable. An accepted authority, like the dictionary, may be used as the criterion for evaluating factual matters.

2p – Praises with private criteria. The teacher praises the student and explains that the praise is based on her private (nonauthoritative) standards or opinions. Statements in this subcategory communicate the teacher's preferences.

Category 3 – Accepts Student Ideas

3a – Acknowledges ideas. The teacher acknowledges a student contribution by simple reflection or a word such as "okay." No evaluation of the student's contribution is included in statements in this subcategory.

3c – Clarifies ideas. The teacher goes beyond simple acknowledgment of the student's contribution by restating the student's idea or speculating on its implications.

3s – Summarizes ideas. The teacher acknowledges contributions of several students by enumerating them or organizing them into a coherent sequence.

Category 4 - Asks Questions

4f – Asks factual questions. The teacher asks for a simple factual response. Questions in this category require recall rather than problem-solving or opinion-giving.

4c – Asks convergent questions. The teacher asks the student to compare or contrast, to relate two or more things in a significant manner, or to follow some formal procedure for solving problems, such as a mathematical formula.

4d – Asks divergent questions. The teacher asks the child to predict, to develop hypotheses, or to speculate on outcomes of actions in a hypothetical situation that does not permit evaluation of student responses as right or wrong.

4e – Asks evaluative questions. The teacher asks students for their evaluation of an idea or an event as better or worse, more or less appropriate, and the like. Evaluation of student response as right or wrong is precluded by the nature of the question.

Category 5 – Lectures

5f – Factual lecture. The teacher communicates factual information or subject-matter content.

5m– Motivational lecture. The teacher attempts to communicate enthusiasm or excitement about subject matter to children or in some other way arouse interest through the use of lecture statements.

5o – Orientation lecture. The teacher describes the procedure for approaching subject matter or presents some framework for what the class has been doing or will do.

5p – Personal opinion lecture. The teacher provides personal opinions or evaluations of ideas or procedures.

Category 6: Gives Directions

6a: Gives cognitive directions. The teacher asks children to do a task primarily cognitive rather than strictly physical such as writing the answer to a problem on the board.

6aa: Gives managerial directions. The teacher directs the student or students to perform a physical movement such as moving chairs.

Category 7: Criticizes

7a: Criticizes with no criteria. The teacher criticizes with no explanation of the reason for the criticism.

7B: Criticizes with public criteria. The teacher criticizes a student and explains the criticism in terms of public standards for evaluation.

7p: Criticizes with private criteria. The teacher criticizes a student and explains the criticism in terms of his personal preferences or opinions.

Category 8: Provides Audio Visual

8f: Optional student aide. The student gives optional information, usually in response to a teacher question (classified as 5f).

8g: Convergent student aide. The student makes a statement involving one of these or a procedural process, such as following a formula or computing, usually in response to a teacher question (classified as 5c).

Category 9: Unprovoked Student Talk

9d: Divergent student response. The student speculates or hypothesizes or gives things might be (as might have been) under given circumstances, usually in response to a teacher question (classified as 5d).

9e: Evaluative student response. The student gives information or opinion or data or reasons or terms, more or less appropriate, etc., usually in response to a teacher question (classified as 5e).

9f: Student comment (aide). The student makes an unsolicited comment.

Category 10: Silence or Confusion?

10a: Silence. There is a period of at least three seconds in which no one is talking.

10b: Confusion. There is a period of at least three seconds in which more than one person is talking and it is not possible to hear what a single person is saying.

Note: Category 10a includes all silences of three seconds or more. All talking sequences that are not coded in 10b is coded in category 5 unless preceded by one of the student categories. If a student is talking and a teacher is talking, the student comment is coded and the teacher comment is coded in category 5.

[illegible]

[illegible]	1.	[illegible] a. [illegible] b. [illegible] c. [illegible]
	2.	[illegible] a. [illegible] b. [illegible] c. [illegible]
	3.	[illegible] a. [illegible] b. [illegible] c. [illegible]
	4.	[illegible] a. [illegible] b. [illegible] c. [illegible] d. [illegible]
	5.	[illegible] a. [illegible] b. [illegible] c. [illegible] d. [illegible]
	6.	[illegible] a. [illegible] b. [illegible] c. [illegible]
	7.	[illegible] a. [illegible] b. [illegible] c. [illegible]
[illegible]	8.	[illegible] a. [illegible] b. [illegible]
	9.	[illegible] a. [illegible] b. [illegible] c. [illegible]
[illegible]	10.	[illegible] a. [illegible] b. [illegible]

[illegible]
[illegible]
[illegible]

6. USING THE EVOLUTIONARY OVERVIEW IN THE NEXT WEEKS

The procedure for using the category system as a basic collection instrument and feedback device in the NEXT Model differs from its use as an observational technique in the classroom in one respect only. We use all expanded categories (no 'telephone directs') relevant to the objectives of the skill exercise. If the purpose of the skill exercise is to develop skill in asking several different kinds of questions, for example, teacher questions and student answer categories will be included in an observation, while for all other classroom behaviors only the basic Interaction Analysis categories will be used. Please, for example, would simply be coded by the observer as "2" (her question would be coded 10 by the observer) in the type of question. The student responses would also be different, based on the use of subcategories. The first number corresponds to the category used in the expanded system. Hence the category system is expanded through the use of subcategories rather than new categories. Data collected in the Expanded Interaction Analysis category system can be compared to all data collected under the basic Interaction Analysis system. For the subcategories enable the teacher to examine certain behaviors in greater detail.

USING THE NEXT MODEL IN YOUR CLASSROOM

The new NEXT Model for teacher training consists of the following five elements derived from research and development in Interaction Analysis and Microteaching:

1. Statement of Objectives

   Elements of lesson planning such as stated objectives that correspond to categories of Interaction Analysis (i.e. discussion, etc.) system.

2. Skill Exercise

   A determinate, definite unit in the improvement of a lesson planning, instructional, objective in the sight of a small group of school children, the object of the exercise of a controlled practice of teaching behaviors.

3. Analysis of Behavior

   Some type of data or collected during the skill exercise. (1) the observer / assistant in Interaction Analysis records the teacher and pupil behaviors in sequence. (2) a video or an audio tape recording of a model of the lesson. (3) students record their perceptions of teaching behaviors relevant to the stated objectives and feedback constitute a sequence recorded observations that will help him focus the feedback session.

b. Excellent Scores

In his feedback session he appeared to consider praise to be useless because it was not followed by any specific comments. He said that he was always nervous before receiving his results and that he usually felt that he had done less well than he actually had. He also explained that he was not interested in the overall score but only in the scores for the individual sections. He said that he would like to receive more detailed feedback on his performance in order to identify areas for improvement.

c. Passing

Since S. is not interested in the objective standard, they is not satisfied with passing. If it is not appropriate, the objective standard is they is not modified to focus more on the practice sessions or problem areas that may be revealed during the original test session.

Objectives may be expressed either in terms of student behaviour or in terms of teacher behaviour. The SOLO Model has been designed to help teachers improve certain specific skills but may apply to a wide range of classroom situations only varying objectives in student behaviour. For this reason the process we intend is a study of teacher behaviour. In the SOLO Model, then, the first step is developing teaching skills in the state, in this specific terms, the teaching behaviour the teacher wishes to develop.

The method employed in the SOLO Model for gathering the required specific terms being observed objectives is that of supposing skills in the acquired in terms of Interaction Analysis categories of the one behaviour, categories of other theoretical systems currently available, or one categories developed in specific skill the trainee. Together we intended in the use of Interaction Analysis a modified system of behavioural categories for evaluation of their own strengths in specific theoretical patterns.

The Model is based in the assumption that in developing a skill the teacher cannot be overloaded with suggestions of aspects to consider. This is the reason why objectives are intended very specific terms, and not one objectives based on a specific skill session are considered a valuable first experience.

(iii) ASSESS

Teaching skill sessions are session in which the participant planning the role of the teacher practices specific classroom behaviour in a life-like teaching context. The class are intended to develop the ability to analyse, and the duration of the lesson is intended to allow for success. The content of the lesson is based on skill are the roles students and teacher are expected to play. In the lesson observed, subject is allowed to plan in role in the the teacher is concerned to developing the specific skill.

Learning skill sessions in this way is vital to the success of the training program. By consolidating Microtraining sessions the trainee can focus more easily on specific skills to be developed and, more significantly, short skill sessions can easily be supported after feedback has been obtained by the trainer until the skill has been fully developed and made a permanent part of the trainee's repertoire.

DATA COLLECTION

The nature of the data collection methods employed in a simulated teaching situation determines the nature of the feedback available to the trainee. Consequently, the four kinds of data collection used in the ISDT Model constitute an important aspect of its results. They are designed to give as complete a picture of the classroom interaction as possible, and they are complementary to one another. The four data collection techniques employed are as follows:

1. Data expressed in a category system (or behavioural) observation
2. Videotape or audiotape recordings of the interactions
3. Perceptions of the participants who play the role of the students
4. Perceptions of the supervisor

The use of a category system such as Interaction Analysis is particularly appropriate for gathering precise and relatively objective data for immediate, quantitative feedback to the person completing an acquire or improve a particular teaching skill. The primary advantage of this particular approach to gathering data is its potential for precision and objectivity. Through the use of Interaction Analysis categories the trainee can obtain a record of (1) the number of times the desired behaviour occurred, (2) the duration of each instance of desired behaviour, and (3) the percentage of time employed by the trainee in performing the desired behaviour.

By contrast the audiotape or videotape recording is used to gather a record that is both complete and objective, but unspecific and undifferentiated. It can be referred to after the teaching session to examine specific instances of desired or undesired behaviour, especially when the trainee's own perceptions of the occurrence differ from those obtained by means of behavioural categories.

Subjective data relevant to the objectives of the skill session are gathered in the form of the perceptions of both participants who played the roles of students and the supervisor who observed the session. These data can help to focus the trainee's attention on the effect of certain behaviours on the learner and to explain instances where the trainee's behaviour as categorized by the observer does not correspond to his intent.

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Immediate, comprehensive feedback is a significant aspect of the [illegible]. The two types of data collected during the skill session can be made available to the trainee promptly in a follow-up feedback session led by the supervisor of the training program. Further, because so much objective data are available, the trainee can evaluate his own progress toward developing a specific skill with no need for criticism or negative comment from the supervisor.

The data collected by an Interaction Analysis observer, in particular, are presented to the trainee either in a summary matrix or in basic data sheet form with key codings pinpointed. The supervisor may help the trainee to determine from the data sheet the points at which his behavior in the skill session did not coincide with the stated objectives of the skill session. The trainee can use the data to determine what further practice sessions are required.

After the trainee is familiar with the Interaction Analysis data, he may wish to have the audiotape or videotape recording played back, so that he can examine certain points in the interaction. The supervisor may help by using some of his perceptions to focus the feedback session on specific instances of desired or undesired behavior, stopping the tape at appropriate points to discuss the relevant behaviors with the trainee.

Students' perceptions of the effect of the trainee's behavior on the class can be written down and given to the trainee on small slips of paper. These may also help to isolate particular interaction periods to watch for during the playback of the tape recording.

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Practice is an essential element in any skill development program. Trainees can determine what further work they require to develop a specific skill during the feedback session with the supervisor. They may then decide to repeat the skill session in its entirety or to modify it so that they can focus on one aspect of the skill they are trying to develop. Data are collected again during the practice session, and feedback sessions are held after each so that the trainee can evaluate his progress and determine the need for further practice.

The skill sessions are coordinated with the categories in the basic Interaction Analysis category system. That is, there will be skill sessions (labels) for each of the twelve behavior categories, and each skill will have a number corresponding to the number of the Interaction Analysis category that includes the behaviors to be practiced. In the explanation of each skill the assumptions lying behind the development of that skill, as well as the purpose for including the skill in the Manual, will be given. A specific situation within which the specified skills can be practiced will also be described, and various modes of the behaviors to be practiced will be listed as alternatives.